7.1.3: Quality audits on environment and energy regularly undertaken by the Institution. The institutional environment and energy initiatives are confirmed through the following

Environment Audit / Green Audit Reports

ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

ENVIRONMENTAL POLICY

The Avanthi Institute of Pharmaceutical Sciences (AIPS) reiterates its dedication to actively participate in the advancement of sustainable development for the nation and the advocacy of eco-friendly technologies via its educational, research, consultancy, and extension initiatives. Our goal is to nurture a community that is environmentally aware and adaptable to climate change, striving towards this vision through a comprehensive approach encompassing curricular, co-curricular, and extension activities.

AIPS is committed to providing its students, faculty, supporting staff, institute associates, and the local community with the requisite knowledge and competencies to act responsibly in relation to the environment. We strive to formulate educational programs designed to instill a profound sense of environmental consciousness, enabling individuals to make well-informed decisions that positively impact sustainability.

Beyond academic endeavors, we actively participate in research and consultancy initiatives dedicated to the advancement of sustainable technologies and solutions. Through the cultivation of a culture characterized by innovation and collaboration, our goal is to tackle urgent environmental challenges and contribute to the creation of a more eco-friendly and sustainable future.

AIPS is dedicated to metamorphosing its campus into an eco-friendly environment that mirrors our unwavering commitment to sustainability. Our endeavor is to infuse nature and environmentally conscious principles into all decision-making processes across all levels. This encompasses the integration of eco-friendly practices into our infrastructure development, energy management, waste disposal, water conservation, and transportation systems.

In pursuit of our objectives, we actively pursue collaborations with leaders in the industry, governmental agencies, and environmental organizations. Through cooperative efforts and the exchange of expertise, we aim to magnify our influence and promote sustainable development within and beyond our institution. AIPS aspires to emerge as a shining example of sustainability, serving as a paradigm for other educational establishments. We firmly hold the conviction that by advocating for sustainable practices and embracing cutting-edge technologies, we can contribute significantly to the overall welfare of society, safeguard our natural resources, and craft a brighter future for future generations.

Environmental Policy is adapted on this day, the 5th of June 2021 at Avanthi Institute of Engineering & Technology, Cherukupally Village, Bhogapuram Mandal, Vizianagaram, Andhra Pradesh 562

PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

GREEN AUDIT REPORT

2023

AVANTHI INSTITUTE OF PHARMACEUTCAL SCIENCES

BY ENVIRO KMKAR

CONTENT

ABBREVIATIONS USED

AIPS	Avanthi Institute of Pharmaceutical Sciences
AIET	Avanthi Institute of Engineering and Technology
AES	Avanthi Educational Society.
AICTE	All India Council for Technical Education
APSRTC	Andhra Pradesh State Road Transport Corporation
C	Carbon
PW	Plastic Waste
Ca	Calcium
CO_3	Carbonates
DO	Dissolved Oxygen
E waste	Electrical & Electronic Waste
EC	Electrical Conductivity
EKL	Enviro Kamka3r LLP
Fig.	Figure
Fe	Ferrous ion
GHRDC	Global Human Resource Development Centre
ha	Hectare
HCO3	Bicarbonates
Hp	Horse Power
HSD	High Speed Diesel
HW	Hazardous Waste
ISO	International Standards Organization
JNTUK	Jawaharlal Nehru Technological University Kakinada
K	Potassium
kg	Kilo Grams
KL	Kilo litres
KLD	Kilo litres Day
km	Kilo Meters
KVAh	Kilo volts amps per hour
KW	Kilo Watts
LPG	Liquefied Petroleum Gas
lph	Litres pern hour
M Tech	Masters of Technology
Mg	Magnesium
MSW	Municipal Solid Waste
Na	Sodium
NAAC	National Assessment and Accreditation Council
NBA	National Board of Accreditation
NCC	National Cadet Corps

NSS	National Service Scheme
pH	Potential of Hydrogen
PW	Plastic Waste
RO	Reverse Osmosis water plant
SO Carbon	Soil Organic Carbon
sq m	Square meter
TA	Total Alkalinity
TDS	Total dissolved solids
TH	Total Hardness
UGC	University Grants Commission

GREEN AUDIT TEAM

ESTD : 2005

Enviro-Kamkar

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

ENVIRO KAMKAR LLP

As External Auditor

K.SRINIJA APARNA

K.S.S.KARTHIK

&

As In-house Team

Dr. T. Rushi, Asst. Professor (Department of Pharmacy Practice)
Dr. V.C. Randeep Raj, Asst. Professor (Department of Pharmacy Practice)

Student Members:

Mr. K.Komal Hariramakrishna (B. Pharm. 3nd year)

Ms. Ch. Gowthami (B. Pharm. 3nd year)

Avanthi Institute of Engineering and Technology

ENVIRONMENTAL POLICY

The Avanthi Institute of Engineering and Technology (AIET) reaffirms its commitment to actively contribute to the sustainable development of the nation and the promotion of sustainable technologies through its educational, research, consultancy, and extension programs. Our vision is to foster an environmentally conscious community that is resilient to climate change, and achieve this through the curricular, co-curricular, and extension activities.

AIET shall equip its students, faculty, supporting staff, institute associates, and the surrounding community with the knowledge and skills necessary to act responsibly towards the environment. Design educational programs with the aim to instil a sense of environmental consciousness and empower individuals to make informed decisions that contribute to sustainability.

In addition to academic pursuits, we actively engage in research and consultancy projects that focus on developing sustainable technologies and solutions. By fostering a culture of innovation and collaboration, we aim to address pressing environmental challenges and contribute to the development of a greener and more sustainable future.

AIET is dedicated to transforming its campus into a green environment that reflects our commitment to sustainability. We strive to make all decision-making processes, at all levels, nature and environmentally friendly. This includes incorporating environmentally conscious practices into our infrastructure development, energy management, waste management, water conservation, and transportation systems.

To achieve our goals, we actively seek partnerships with industry leaders, government agencies, and environmental organizations. By collaborating with experts and sharing knowledge, we can amplify our impact and foster sustainable development both within and beyond our institution. Through our collective efforts, AIET aims to become a beacon of sustainability and serve as a model for other educational institutions. We firmly believe that by promoting sustainable practices and technologies, we can contribute to the overall well-being of society, protect our natural resources, and create a better future for generations to come.

Environmental Policy is adapted on this day, the 5th of June 2021 at Avanthi Institute of Engineering & Technology, Cherukupally Village, Bhogapuram Mandal, Vizianagaram, Andhra Pradesh 531162

ESTD : 2005

Enviro-Kamkar

Certification & Inspection

ENVIRO KAMKAR LLP

An ISO/IEC 17020: 2012 compliant company

VISAKHAPATNAM – 530 017

This is to certify that a

Green Audit for

Avanthi Institute of Pharmaceutical Sciences

Cherukupally (V),Bhogapuram (M), Vizianagaram, 531 162,

was conducted to assess the planning, implementation and impacts of the

Green Initiatives of the Institue

for the year 2021 – 2022

and was awarded with Grade

"B+"

On this Day, the February 5th, 2023 at Visakhapatnam.

Certificate No. GAEKL202206

ENVIRO KAMKAR LLP * VISAKHAPATNAM *

(Ms. K. S. Aparna)

Chief Audit Officer, Enviro Kamkar LLP

1.PREAMBLE

Avanthi Institute of Pharmaceutical Sciences (AIPS), introduced in 2005, has gracefully evolved as a member Institutions of Avanthi Educational Society (AES), at Visakhapatnam, conceived in 1991 by the visionary philanthropist Sri M. Srinivasa Rao. The society has been a steadfast proponent of quality education for over 15 years through AIET (Avanthi Institute of Engineering and Technology) and AIPS. Ever since its inception, AIPS has strived to stand as one of the premier institutions in the domain of pharmaceutical sciences, earning recognition from the Indian Pharmaceutical Association (IPA) for its unwavering commitment to excellence.

Mirroring the national goals and missions, AIPS aligns itself with the AES's policy of dedication to making the campus*green and environment-friendly*. AIPS takes pride in initiating a comprehensive green audit and entrusts it to Enviro Kamkar LLP (EKL), a startup company of environment consultants, groomed and incubated by IIM(B) & NSRCEL. The audit aims to understand the impacts of the AIPS's efforts in the protection of Nature and the Environment, along with the contributions to national SDGs (Sustainable Development Goals).

2.ABOUT AIPS

AES was initiated with a vision to provide fair access to higher education to the students of the North Andhra region. The campus of AIPS was located at Cherukupalli, a semi-urban area situated near Thagarapuvalasa, Vizianagaram district, Andhra Pradesh, and is equidistance between the two cities of Visakhapatnam and Vizianagaram. The location was within reach of 2 hrs from most places in the north Andhra region.

AES has a sprawling campus at Cherukupally, and the campus is being shared by AIET and AIPS. Besides academic and administrative blocks, the two institutions share common facilities like playgrounds, a library, and other amenities that were specifically dealt with at relevant places in this report.

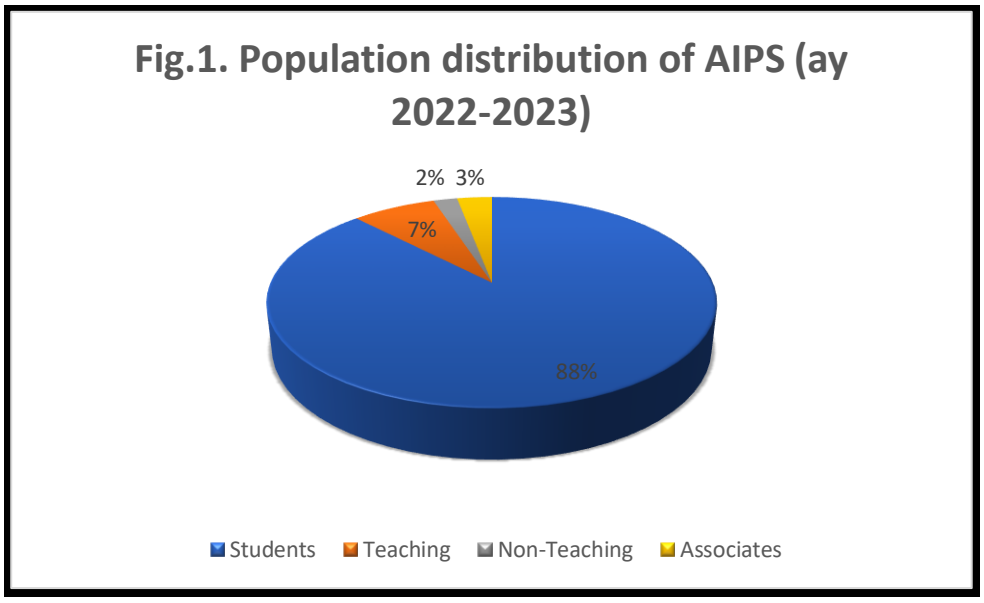
AIPS, ever since its inception in the year 2005, was an affiliated institution of Jawaharlal Nehru Technological University Kakinada (JNTU-K), and in the year 2023, the affiliation was transferred to Jawaharlal Nehru Technological University GurazadaVizianagaram (JNTU GV) following the bifurcation of JNTUK. AIPS has obtained approval for affiliation with and accreditation by the Pharmacy Council of India (PCI), effective from September 20, 2022.

The institute offers four-degree programs: (1) B.Pharm with an annual intake of 100 students;

(2) M. Pharm in four specializations [Pharmaceutical Analysis; Pharmacology; Pharmaceutics; **and Pharmaceutical Technology] with an annual intake of 15 students per specialization; (3)** Pharm. D with an annual intake of 30 students; and (4) Pharm D (PB) with 10 seats. The student's mobility from these courses, as was evident from the institution's records was promising and appreciable.

2.1. CAMPUS POPULATION:

The AIPS community is a non-resident community, and can broadly be considered under four categories: (1) Students; (2) Teaching Staff; (3) Non-teaching Staff; and (4) Associated personnel. The general size of all these categories together was 726 individuals for the AY 2021-2022.



As shown in Fig. 1, Students make up around 88% of the population, teaching faculty account for 7%, the remaining 2% represent non-teaching staff and 3% represent Associates (who are not employees of the institution, but rendering various services to the college).

The Quality Policy of AIPS states "Avanthi Institute of Pharmaceutical Sciences, emphasizes the ethical ideas to impart advanced training by creating the best possible infrastructure engaging and activity-oriented teaching. The quality policy typically focuses on ensuring excellence in education, research, and professional development. It may highlight adherence to regulatory standards, continuous improvement, and the cultivation of a supportive learning environment to achieve academic excellence through innovation and discipline.

3. SCOPING OF GREEN AUDIT

The scope of a Green Audit evaluates the impacts of the practices of the institutions on various environmental components and goes beyond defining the state of environmental components. The audit should help the management in the sustainable use of natural resources and minimization of waste and pollution. Institutions of higher learning shall have the mandate to inculcate an environment-friendly culture among the students through different activities. Thus, the scope of this Audit includes the following:

1. Environmental Component Assessment: The Green Audit assesses the uses and uses practices of the institution with reference to Land, and water, energy, along with quantifying the wastes generated, emissions discharged, and the quality of the environment;
2. Environmental Policy Compliance: The Audit also focuses on the institution's compliance with the Institution's Environmental Policy and the policies of the AICTE and NAAC;
3. Year-to-Year Comparison: The Green Audit enables the institution to analyze its environmental performance over different years;
4. Education and Awareness: The Green Audit serves as an educational tool, raising awareness among students and employees about environmental issues and promoting a culture of sustainability. It helps in instilling environmental responsibility and inspiring individuals to contribute to a positive environmental change.
5. Improvement Prioritization: Through the Green Audit, areas for improvement are identified, allowing the institution to prioritize future projects and initiatives. This enables the institution to allocate resources effectively and implement measures that will have the most significant impact on environmental and economic performance.

3.1. GOAL AND OBJECTIVES OF GREEN AUDIT:

The primary goal of green audits is to mitigate resource wastage, enhance resource quality, and promote sustainable practices among the campus community and the wider public. The specific objectives of green auditing include:

1. Adopt eco-friendly Land use and ensure sustainability;
2. Document the Biodiversity of the campus and propose measures to enhance biodiversity with native species;
3. Develop water resources and promote water conservation;

4. Regulate energy consumption, achieve energy efficiency, and promote use of Renewable Energies;
5. Regulate waste generation at source, evolve innovative recycling and reuse, and adopt safe disposal methods.
6. To ensure all AIET members are environment-conscious.

By achieving these specific objectives, the green audit aims to contribute to the overall goal of improving the environmental performance of the institution and fostering a culture of sustainability among its stakeholders.

4. APPROACH TO GREEN AUDIT

Elaborated deliberations were held involving the management, staff, and the team of the external auditors, M/s. EKR before initiating the audit program. It is the second consequent year for AIPS Green Audit and the audit reporting period was aligned with the academic year, i.e. from June to May every year. Assessment for the current audit year will be aligned with previous year. The entire process was divided into three stages:

A) *Pre-Audit Stage*: Chaired by the Principal of the Institution, the GA Team was formed, comprising five Core Members (three from the institution and two from the third-party consultant organization, EKR). The institutional members engaged department and unit heads from various wings of AIPS, including teaching, administrative, and allied units. During this stage, GA protocols, requirements for collecting audit evidence, and implementation schedules were prepared;

B) *Audit Stage:* This stage involves the day-to-day collection and validation of audit evidence, necessitating systematic record-keeping and database development. Given that this was AIPS's inaugural audit, the core team reviewed procedures and methods in detail. The validation of GA evidence was streamlined, focusing on key sectors such as land use, water, air quality, greenery, waste generation, and proper disposal. EKR conducted training and awareness programs for students, teaching staff, and supporting staff. The audit results were analyzed and presented to the Management of AIET.

C) *Post-Audit Stage:* This stage entails the management's review of the GA report and the issuance of terms of reference to initiate next year's Green Audit.

In summary, the GA was conducted in three phases. Following the previous year, APIS maintained book keepings for all the collection of audit evidence has become a major challenge. However, for subsequent audits, the bookkeeping practices were initiated as proposed by M/s. EKR, ensuring a comprehensive assessment and documentation of the institution's environmental performance.

5.GREEN AUDIT

This being the second consecutive year of Green Audit for the AIPS, thus the recordings are observed, compared with previous year indicators. The findings of the Audit are reported below after due validation by the audit team.

5.1. LAND USE AND LAND UTILIZATION

AIPS along with its sister institution, AIET (Avanthi Institute of Engineering & Technology share a campus of around 5 hectares, at *Cherukupally* village, near Thagarapuvalasa, Vizianagaram district. As part of their good management practices, both the institutions though are housed in separate constructed structures for academic and administrative purposes, they share the premises and other common amenities like playgrounds, a library, an auditorium, and other infra facilities. Thus, the total campus has over 49% of the land under the Open category, enabling the land to perform ecosystem services. The distribution of the land use categories is presented in Fig. 1 below:

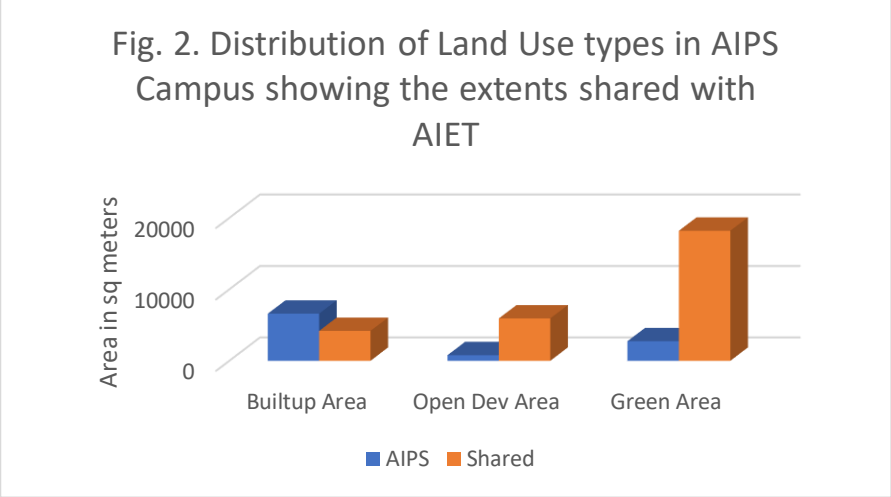


Fig. 2. Distribution of Land Use types in AIPS Campus showing the extents shared with AIET

Following the previous academic year, there has been no notable development observed in the realm of land use, However, AIPS has an area of 2.5 acres (10117 m^2) area registered in its name, of which over 65% (6595 m^2) is the built-up area housing academic and administrative blocks. The remaining 786 m^2 area was under roads, paths, and opens, while the 2736 m^2 area is marked as a green area. In addition to its land, it shares significant land and developed areas with AIET, which is its sister institution, and both institutions are constituted under the same Society, AES. The shared area under the Built category accounts for 4182 m^2 which includes an Auditorium, student facilities, and library; The shared area under the Open Developed category accounts for 5928 m^2 and, includes playgrounds, parking area, etc.; and the shared area under

the Greens category accounts for 18200 m^2. Thus in addition to the 10117 m^2 area of AIPS, the institution is legitimately sharing another 28310 m^2 of area with the AIET.

5.2. VEGETATION AND BIODIVERSITY

The area under Greens available for the AIPS is at 0.2736 ha only, in addition to this an extent of 1.82 ha of the green area is being shared with the AIET. Since 87% of the area under Greens is shared one, the biodiversity and vegetation surveys carried out for the AIET were validated for use by AIPS as the area green development is the outcome of both the institutions.

A. *FLORA & PLANT DIVERSITY*:

The flora of the campus comprises 39 species belonging to 34 genera and 17 families. Of these 18 were tree species and 19 were herb species, while shrubs were recorded with only two species. Among herbs and shrub species, exotic ornamental species were not taken into account. The list of plant species recorded is presented in Annexure I.

There were eight fruit-bearing species and the overall *Maximum Possible Diversity* of the campus was at 3.664 bits as per the Shannon-Weiner Index. The *Actual Species Diversity* of tree species was at 2.609 bits with a *Species Evenness* of 0.903, indicating good distribution.

B. *BIOMASS OF TREES*:

The number of trees in the developing stages was recorded at 160, and within three years most of them will be contributing to the tree cover. Presently, 363 matured trees are existing in the campus. For Tree biomass, only the matured trees were taken into consideration. Based on the girth and height of the trees enumerated, by using the standard ecological methods, the biomass of the trees for the 18 species was estimated at 26.35 tons in the AY 2022-2023 (Table 1).

Table 1. Tree species Enumeration and Biomass (Dry Weight).

T No.	Species	Mean GBH (cm)	Mean Ht (m)	Population	Total BM (Tons)
1	Mangifera indica L.	40.5		18	1.747
2	Borassus flabellifer L.	40		44	4.571
3	Cocos nucifera L.	31		19	1.054
4	Wodyetia bifurcate A.K. Irvine)	38		62	4.522
5	Conocarpus Erectus L.	27		23	1.530
6	Terminalia catappa L.	43		16	1.921
7	Acacia leucophloea (Roxb.) Willd.	28		3	0.117
8	Caesalpinia pulcherrima (L.) SW.	36		29	1.899
9	Tamarindus indica L.	40		22	1.524
10	Tectona grandis L. f	30.5		11	0.812
11	Azadirachta indica A. Juss	27		13	0.616
12	Ficus religiosa L.	39		1	0.077
13	Syzygium cumini L. Skeels	59		12	1.809
14	Neolamarckia cadamba (Roxb.) Bosser	53		7	1.135
15	Artocaarpus Heterophyllus	37.5		4	0.263
16	Acacia Aneura	30.5		29	1.454
17	Saraca Asoca	22		40	0.978
18	Sapodilla	22.2		10	0.339

C. CARBON STOCKS IN BIOMASS:

The Carbon stocks in the trees of AIPS campus were estimated using standard stock assessment methods. The general default value of 48% of the Dry weight recommended for tropical trees was adopted and thus the C stocks from the tress was arrived at 12.657 tons. Added to this, another 47 tons of C was present ion the soils. Thus, the total C stock in the AIPS Campus was estimated at 60 tons. The Carbon stocks in the trees of AIPS campus were estimated using standard stock assessment methods. The general default value of 48% of the Dry weight recommended for tropical trees was adopted and thus the C stocks from the tress was arrived at 12.657 tons. Added to this, another 47 tons of C was present ion the soils. Thus, the total C stock in the AIPS Campus was estimated at 60 tons. " re write and make some minute changes in the carbon stocks, for the next year

D. MAJOR FAUNA:

The campus vegetation at AIPS serves as a habitat for various animal species, providing a home for diverse wildlife. During a single day's inventory, over 20 species were observed, as listed in Annexure II. The most common bird species found on campus is the Common Myna, while the presence of numerous butterfly species adds to the enchantment. In addition to these natural inhabitants, the campus supports a range of other fauna.

5.3. WATER RESOURCES MANAGEMENT

The RO water plant's operation remains consistent, producing 3 liters of wastewater for every 1 liter of treated water, resulting in approximately 4 KLD of rejected water on working days. This water continues to be collected and utilized for gardens and green areas. Sewage management practices also remain unchanged, with wastewater directed to soak pits and septic tanks. Effluent disposal from the Wet laboratory, where chemicals are utilized, follows the existing protocol of disposal through authorized collectors every two months.

Overall, the water management practices and consumption patterns at AIPS and AIET for the next year remain identical to the previous year, ensuring continued sustainability and efficiency in water usage across the campus.

5.4. WASTES MANAGEMENT

Waste management initiatives of AIPS prioritize the appropriate handling and disposal of various waste categories in accordance with the Environmental (Protection) Act, of 1986. The waste is categorized into four main types: solid waste (MSW), plastic waste (PW), hazardous waste (HW), and e-waste. However, based on the population-specific data from AIPS, the overall waste consumption might differ from AIET. Understanding the dynamics of waste management and production on a per capita basis could reveal variations in waste generation and handling practices, potentially highlighting the impact of individual behaviours and consumption patterns on the overall waste management landscape.

All the wastes generated are quantified on a weekly basis, from which the daily averages were worked out. For safe disposal of the wastes, the wastes are collected separately as shown in Table 2 below:

Table 2. Management of different Wastes in AIPS campus for AY 2022-23.

#	Waste Type	Gen.Sources	Gen. Rate	Disposal Practice
1	Wet Waste	Dining Halls; Waiting Rooms; Canteen	4 kg/day	Composted
2	Paper & Package	Academic and administrative blocks; Labs; Workshops	3 kg/day	Authorized collectors
3	Metallic & Glass Wastes	Laboratories & Admin blocks	6.2 kg/month	Innovation Hub + Authorized collectors.
4	Plastic Wastes	All Blocks	1.2 kg/day	Innovation Hub + Authorized collectors.
5	Sanitary Wastes	Labs and Wash Rooms	1 kg/day	Incinerated
6	E-Wastes	Academic and Admin blocks	<2kg/ month	Innovation Hub + Authorized collectors.

6.ENVIRONMENTAUDIT

AIPS ever since its inception recognized the importance of environmental protection and providing environmental education to its students through conducting environmental awareness programmes in the surrounding villages. Besides following the AICTE recommended components for the students and institutions of technical education, to enable the building of the nation and ensure Sustainable Development, AIPS has adopted its own Environmental Policy in the year 2021.

6.1. Curricular Inclusions

All the graduate students of Pharmaceutical sciences, during their first year and in the 2nd Semester shall undergo a course in Environmental Sciences. Though there were no recommended practical's for this paper, AIPS, as per its policy assigns several environmental-related small projects like, waste management, water conservation, and quality, etc. Through this paper, several awareness and environmental activities were conducted as Green Initiatives during the AY 2022-23 and are as follows (Annexure 5):

1. ***Walkways in Harmony: Fostering a pedestrian-centric campus;***
2. ***Environmental art gallery for raising environmental awareness among AIPS students and involvement in saving the earth, and saving life;***
3. ***Vehicle pooling to reach the campus;***
4. ***Green belt plantation drive at Avanthi Institute of Pharmaceutical Sciences***.

6.2. Environmental Activities

A. Environmental Awareness Program: APIS maintained its Environmental Awareness Program for the second year in a row as part of the induction process for newly admitted students. This program aimed to acquaint students with the nation's environmental policy, involve them in environmental activities, raise awareness about environmental responsibilities, and emphasize the importance of sustainable development. In this audit year, students had the opportunity to discuss various environmental aspects based on their interests and interact with expert environmentalists.

B. Student Webinars on Environment: In the academic year 2023-24, the Environmental Sciences wing of AIPS continued its monthly webinar series on diverse environmental topics, providing students with ample opportunities to showcase their works and perspectives. A total of five webinars were held, each focusing on different environment-friendly technologies.

C. ***Eco – Responsibilities:*** student participation in eco-responsibilities has been notable. Students have been actively involved in initiatives aimed at promoting environmental sustainability within the college community. From attending workshops on recycling to volunteering for campus clean-up drives, students have shown a strong commitment to taking care of our environment. Their enthusiasm and dedication to eco-responsibilities are evident in their daily actions, contributing to a greener and more eco-conscious campus environment.

6.3. Environmental Indices

to evaluate the effectiveness of environmental management practices and assess performance, a set of Environmental Indices has been developed. Using data from the previous year as a baseline, indicators for the current year have been re assessed and generated and compared accordingly. The following indicators have been established for monitoring each year and comparing changes over time:

No.	Indicator	2021-2022	2022-23
LAND USE			
1	Total Geographical Extent (m^2)	10,117	10,117
3	Built-up Area (m^2)	6593	6593
4	Per capita built-up Area (m^2)	9.08	9.08
WATER RESOURCES			
9	Total Water Consumption	30 kld	30 kld
10	Per capital Water Consumption	41.32 l/day	41.32 l/day
11	Waste Water RRR	3 kld	3 kld
ENERGY RESOURCES			
12	Total Energy Consumption	151531 KW	168479 KW
13	Per Capita Energy Consumption	209 KW	229.2 KW
14	Solar as % of total consumption	10 %	10%
15	Direct consumption of HSD	600 l/annum	600 l/annum
16	Direct Consumption of LPG	14 kg/annum	14 kg/annum
WASTE MANAGEMENT			
17	Wet Waste Generated	4 kg/day	4 kg/day
18	Dry Waste Generated	2.1 kg/day	3 kg/day
20	Plastic Waste Generated	0.15 kg/day	0.15 kg/day
21	E-Waste Generated	0.03 tons	0
CARBON FOOTPRINT			
22	Total C emissions/annum	173.461	222.54
23	C emissions offset (Solar)	13.563	16.950
24	Net emissions/annum	159.893	205.95

6.4. STATUS OF ENVIRONMENTAL COMPLIANCES:

AIPS, being one of the leading pharma educational institutions of Andhra Pradeshhas demonstrated its commitment to environmental protection by meeting the statutory requirements and social obligations related to Environment. Towards these different parameters for compliance were identified and the compliance status was graded as shown in the Table below:

Table: Status of Environmental Indicators of Compliance of AIPS for AY 2022-23.

No.	Compliance Head	Rank	*Ranking*
1	Maintaining Height of DG Set Stacks	*****	* = Aspirant ** = Improving *** = Moderate **** = Good ***** = BEST
2	GWBpermissions	*****	
3	PUC certificates for vehicles	*****	
4	E-waste Rules	***	
5	Green Building Norms	***	
6	Use of Renewable energy	*****	
7	Solid Waste Management Rules	***	
8	Plastic Waste Management Rules	***	
9	Energy Efficiency	**	

7.RECOMMENDATIONS FROM GREEN AUDIT

1. The college has to encourage all students coming from more than 25 km of distance to avail residential facilities so that the college can achieve carbon neutral status, as emissions factors of transportation is very high and also cumbersome to the young engineers whose real talents cannot be utilized.
2. The book keeping procedures for waste management, especially for E waste, must be improvised.
3. Recommended to conduct interdepartmental activities on Environment and Sustainable development to promote environmental consciousness among the students, employees, and other stakeholders.
4. On the resources management, the college should improve upon in all the indicators, and recommended to monitor then every year.
5. The college should enhance the use of the renewable energy sources.
6. Waste management strategy must be developed and appropriate disposal methods need to be followed.

ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by AICTE, PCI, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)
Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.
www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Cherukupally,

Date**:** 10-01-2023

Circular

This is to inform to all the faculty members and students to use the Pedestrian-Friendly pathways in the campus: A green and campus initiative has been drafted, planned, and accepted for implementation in the campus by Green and Clean Campus Expert Panel. So, from here onwards all the members are requested to follow this initiative and be a part of successful implementation. We are planning to practice this for students and college members which give us safety and used to prevent accidents.

PRINCIPAL

Circulated to:

1. All HOD's (Pharm.D, B.Pharmacy).
2. Class teachers of Pharm.D.
3. Class teachers of B.Pharmacy.
4. Class teachers of M.Pharmacy.
5. Administrative Officer.

GREEN AND CLEAN CAMPUS INITIATIVES:

WALKWAYS IN HARMONY: FOSTERING A PEDESTRIAN-CENTRIC CAMPUS [2022-2023]

1. Title of the practice: Walkways in Harmony: Fostering a Pedestrian-Centric Campus.

2. Objectives:

- Encourage walking as modes of transportation in the campus.
- Improve safety for pedestrians and enhance sustainability.
- Create more livable and sustainable communities in the campus.
- Reduce traffic congestion in the campus.

3. Context:

The pedestrian pathway in our campus serves as a vital network of walkable routes designed to facilitate safe and convenient movement for students, faculty, and staff. This infrastructure aims to connect key academic and recreational areas, fostering a sense of community and enhancing overall campus accessibility. This pathway is designed to ensure efficient traffic flow, prioritize pedestrian safety, and contribute to the overall positive experience of navigating the campus environment.

4. Practice:

Managing the campus pedestrian pathway involves prioritizing safety through features like crosswalks and clear signage, ensuring regular maintenance for aesthetics and functionality, promoting accessibility for all individuals.

Pedestrian-friendly pathways can take a variety of forms, but they typically include the following features:

- Smooth, well-maintained surfaces.
- Crosswalks with pedestrian signals and traffic calming measures.
- Shade trees and other amenities to make walking and biking.

5. Evidence of success:

It found that pedestrian-friendly pathways can lead to reduction in traffic congestion and prevent accidents and improves public health. It is used to create more vibrant and livable communities. Success in a college pedestrian pathway can be measured by factors such as improved safety, efficient traffic flow, and positive user feedback.

6. Problems encountered:

One of the biggest challenges to implementing pedestrian-friendly pathways is maintenance and individual practice. It can be expensive to build and maintain new sidewalks and bike lanes. Another challenge is space. There may not be enough space to build more spacious pedestrian-friendly pathways.

7. Resources required:

To implement pedestrian-friendly pathways, college developed plans. College allocated funding for construction and maintenance. College may also need to work with businesses and community groups to promote the use of pedestrian-friendly pathways.

8. Conclusion:

The organization of Pedestrian-friendly pathways is an effective way to promote walking which reduce traffic congestion. Avanthi institute of pharmaceutical sciences take this initiative to improve safety for pedestrians and enhance sustainability.

Pedestrian pathway to reduce the use of vehicle within the AIPS campus and for easy walking pathway.

Cherukupally,
Date: 02-05-2023

Circular

This is to inform to all the faculty members and students that environmental art competition will be conducted on 03-05-2023. So, all the students are hereby informed to participate in the art competition and art exhibition and support in creating environmental awareness and involvement to save earth.

PRINCIPAL

Circulated to:

1. All HOD's (Pharm.D,B.Pharmacy).
2. Class teachers of Pharm.D.
3. Class teachers of B.Pharmacy.
4. Class teachers of M.Pharmacy.
5. Administrative Officer.

GREEN AND CLEAN CAMPUS INITIATIVE:

ENVIRONMENTAL ART GALLERY [2022-2023]

1. Title of the practice: Environmental art gallery for raising environmental awareness among AIPS students and involvement to save earth, save life.

2. Introduction:

To foster environmental awareness among the college community, a group of dedicated college students undertook the initiative to organize and curate an art gallery. The event aimed to channel the creativity and artistic talents of the students to communicate messages about environmental conservation, sustainability, and the urgent need for collective action.

3. Art gallery concept:

The art gallery, titled "SAVE EARTH, SAVE LIFE," was a vibrant showcase of diverse artworks, including paintings, sculptures, installations, and mixed media creations. The underlying theme revolved around the delicate balance between humanity and the environment, emphasizing the impact of human activities on the planet.

4. Curatorial process:

The student curators worked collaboratively to select and organize the artworks for gallery. They encouraged fellow students from various disciplines to contribute their pieces, ensuring a broad spectrum of perspectives on environmental issues. The curators also sought to incorporate different artistic styles, from abstract to realistic, to appeal to a wide audience.

5. Week-long art gallery exhibition:

The main highlight of "Harmony in Hues" was a week-long art gallery featuring a diverse range of artworks. Students, faculty, and even local artists contributed pieces that focused on environmental themes such as biodiversity, climate change, sustainability, and the beauty of nature. The art gallery was open to the public, fostering a sense of community engagement.

6. Art demonstrations:

To enhance the interactive nature of the event, art demonstrations were conducted by the college staff. These sessions provided insight into the creative process and allowed attendees to witness the transformation of raw materials into environmentally themed masterpieces.

7. Art competitions:

To encourage active participation among students, art competitions were organized with themes centered on environmental conservation. This initiative not only showcased the artistic talents of the student body but also allowed for the expression of diverse perspectives on environmental issues.

8. Artistic themes:

- The artworks displayed at "Harmony in Hues" covered a broad spectrum of environmental themes:
- **Flora and Fauna:** Artists celebrated the beauty of nature through depictions of landscapes, wildlife, and plant life.
- **Climate Change Awareness:** Some artworks conveyed the impact of climate change through powerful imagery, encouraging viewers to reflect on the urgent need for action.
- **Environmental Activism:** Some artists used their works to communicate messages of activism and the importance of individual and collective efforts in preserving the environment.

9. Impact and feedback:

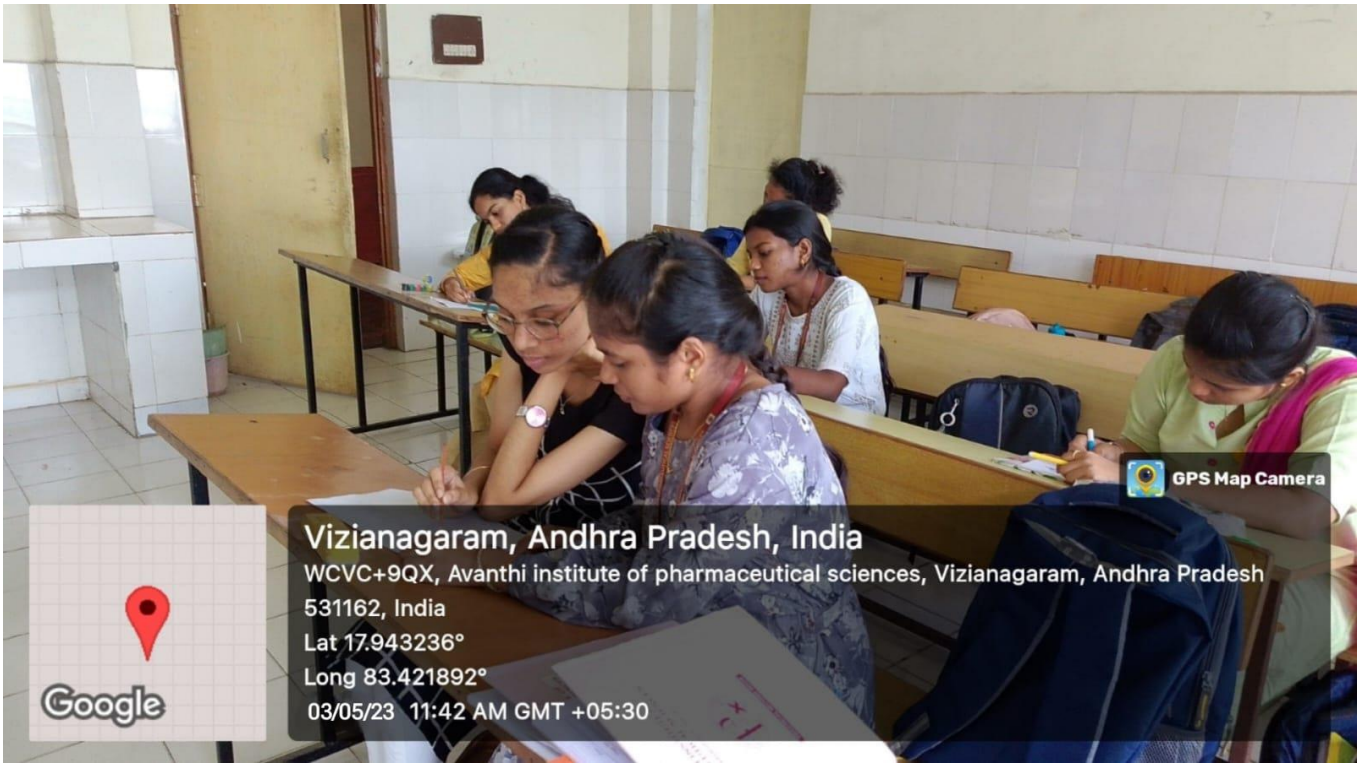
The exhibition garnered positive feedback from students, faculty, and visitors. Many expressed appreciations for the creative approach to raising awareness and the effectiveness of the artworks in conveying powerful messages. The event sparked meaningful conversations about the role of individuals and communities in addressing environmental challenges.

10. Conclusion:

"Expressions of Awareness" not only showcased the artistic talents of the college students but also served as a catalyst for environmental consciousness. By blending creativity with education, the exhibition successfully communicated the urgency of environmental issues and inspired the college community to consider their roles in building a more sustainable future. This student-led

initiative stands as a testament to the transformative power of art in promoting awareness and inspiring positive change.

Active participation of AIPS students in the drawing competition themed "Save Earth, Save Life"



Student's showcaing their drawing skills in art competition conducted based on different artistic themes selected.

Art works of the AIPS students exhibited in the environment art gallery exhibition at campus notice board

Visual elegance of Principal, Vice-Principal and students of AIPS in the environment art gallery

The students at the environment art gallery were presented with plants by the Principal and Vice-Principal of AIPS.

ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by AICTE, PCI, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)
Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.
www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Cherukupally,

Date**:** 19-05-2023

Circular

This is to inform to all the faculty members and students to start practice the Vehicle Pooling in the campus: A green and campus initiative has been drafted, planned and accepted for implementation in the campus by Green and Clean Campus Expert Panel. So, all the members are requested to follow this initiative and be a part of successful implementation. We are planning to practice this for students and college members which give us safety and used to prevent accidents.

PRINCIPAL

Circulated to:

1. All HOD's (Pharm.D,B.Pharmacy).
2. Class teachers of Pharm.D.
3. Class teachers of B.Pharmacy.
4. Class teachers of M.Pharmacy.
5. Administrative Officer.

GREEN AND CLEAN CAMPUS INITIATIVES:

VEHICLE POOLING [2022-2023]

1. TITLE OF THE PRACTICE: Vehicle pooling to reach the campus.

2. OBJECTIVES:

- To decrease air pollution within the campus.
- Create more livable and sustainable communities.
- Reduce fuel consumption.
- To reduce traffic congestion.

3. CONTEXT:

Vehicle Pooling is designed to reduce excessive vehicle usage within the campus and minimize pollution by reducing number of vehicle entry in to the campus. Vehicle pooling helps to save money and time and reduces fuel consumption.

4. PRACTICE:

Establishing, communicating, and enforcing motor pool policy can go a long way toward assuring safety, mitigating risk and running your fleet operation in a cost-effective manner. The best way to determine the optimal number, types and locations of vehicles in vehicle pool is through reviewing vehicle utilization data, ideally over a period long enough to notice seasonal patterns and changes among different groups.

5. EVIDENCE OF SUCCESS:

It is found that vehicle pooling can lead to reduction in vehicle usage and entry of number of vehicles into the campus, decreased air pollution and creating a pleasant environment within the campus. Improves public health. It is used to create more vibrant and livable communities of AIPS campus.

6. PROBLEMS ENCOUNTERED:

One of the biggest challenges to implementing vehicle pooling is less privacy while

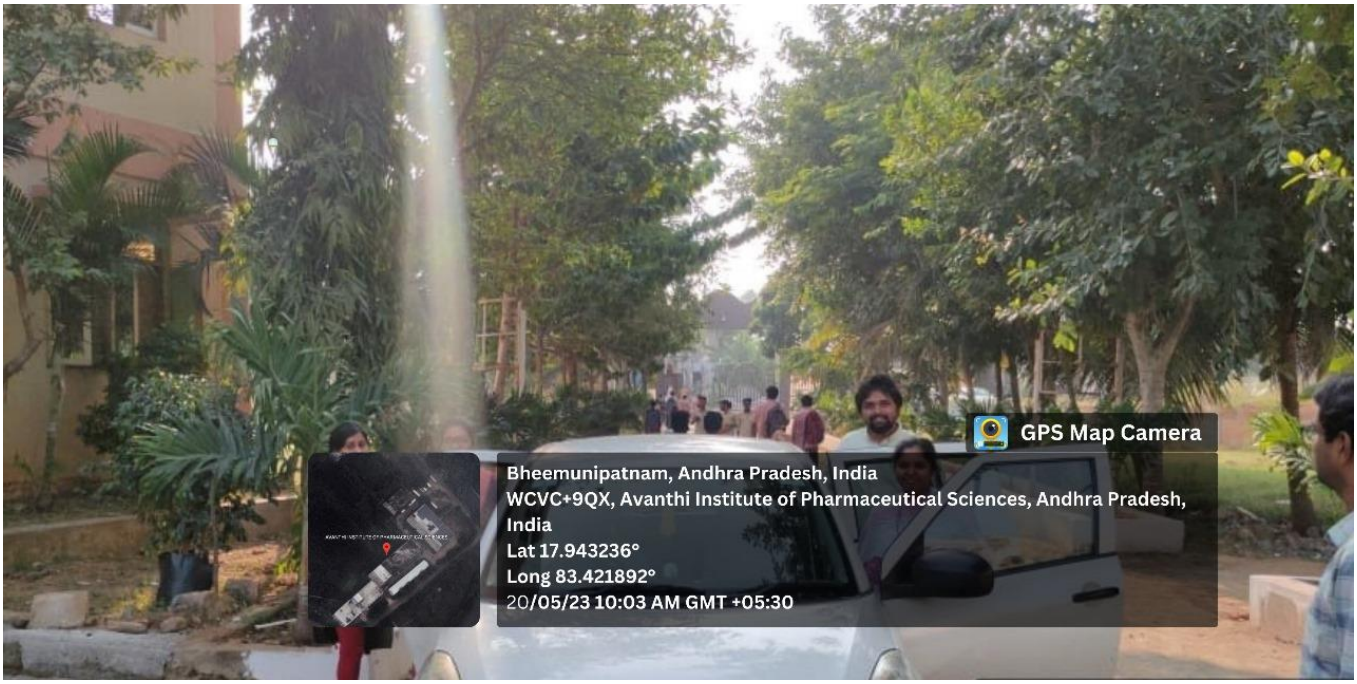
travelling. Those individuals will have to compromise with their privacy. Different time requirements-Individuals who carpool together may finish works at different times or may need to reach their destination differently.

7. RESOURCES REQUIRED:

To implement vehicle pooling, college should develop plans. College may also need to work with business and community groups to promote the use of vehicle pooling. Institution should consult with their employees/students about carpooling as an option for their travelling.

8. CONCLUSION:

The organization of vehicle pooling is an effective way to excessive vehicle usage within the campus and minimizes pollution by reducing number of vehicle entry in to the campus. Avanthi Institute of Pharmaceutical Sciences takes this initiative to save money and time for students and employees.



Vehicle pooling-A Green campus initiate followed by AIPS Faculty members

AIPS faculty members have decided to adopt a sustainable approach towards the environment by arriving in a single car and reducing campus carbon footprint.

Minimizing the excessive use of vehicles, the faculty members of AIPS have chosen to commute together in a shared car through carpooling.

ESTD : 2005

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www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Cherukupally

Date: 06-06-2022

Circular

This is to inform all the faculty members and the students that 5th Pharm.D students are organizing a "Green belt plantation drive" at East Zone of Main Campus of Avanthi Institute of Pharmaceutical Sciences. So, from here onwards all the members are requested to follow this initiative and be a part of successful implementation.

PRINCIPAL

Circulated to:

1. All HOD's (Pharm.D, B.Pharmacy).
2. Class teachers of Pharm.D
3. Class teachers of B.Pharmacy
4. Class teachers of M.Pharmacy
5. Administrative Officer

GREEN AND CLEAN CAMPUS INITIATIVES:

GREEN BELT PLANTATION DRIVE [2022-2023]

1. TITLE OF THE PRACTICE: Green belt plantation drive at Avanthi Institute of Pharmaceutical Sciences

2. BENEFITS OF TREE PLANTATION:

- Biodiversity Support: Trees provide habitats for various species, contributing to biodiversity and supporting diverse ecosystems.
- Soil Conservation: The root systems of trees help prevent soil erosion and enhance soil structure.
- Noise Reduction: Trees act as natural sound barriers , absorbing the deflecting noise, contributing to a quieter and more pleasant environment in the college surroundings.
- Aesthetic Value: Trees enhance the beauty of landscapes, making the campus more visually appealing.

3. OBJECTIVES:

- To enhance greenary in the campus.
- To increase the quality of air.
- To make the campus pollution free.
- To sensitize students towards the importance of plants.
- To establish a pleasant and enjoyable atmosphere.
- To motivate the staff and students through environmental literacy.
- To incorporate green protocol among students and staff.

4. ACTIVITIY:

The program was commenced by planting trees in East zone of Main Campus. A total of 25 pits have been made in which 25 small saplings have been planted by 5th Pharm.D students along with faculty members (Dr.T.Rushi Naidu, B.Chaitanya, A.Nanaji) in an area of 100 mtrs and watered. The need to maintain and water the plants have been explained to all individuals and made it a responsibility

of everyone participated in the plantation drive. A total of 30 saplings have been planted in this phase.

Various plants that are planted in this phase include:

S.No	Name of the Plant	Common Name
1	Reba	Candyleaf
2	Clay Green Ficus	Ficus Tree
3	Aracuria Heterophylla	Norfolk Island Pine
4	Ficus Black	Weeping Fig

5. EVIDENCE OF SUCCESS:

Quantifiable Growth:

Documented data showcasing the number of trees planted during the program. This data could include specific species, locations, and the overall increase in green cover on AIPS premises.

Tree Survival Rates:

Regular monitoring reports indicating the survival rates of the planted trees. High survival rates would be indicative of effective care and maintenance strategies implemented post-plantation.

Environmental Impact:

Air and water quality assessments before and after the tree plantation, had showed positive influence on local environmental conditions.

6. CONCLUSION:

The Green belt plantation drive at AIPS stands as a resounding success, demonstrating the institution's commitment to environmental stewardship and community well-being. The evidence of success is multifaceted, encompassing both quantitative metrics and qualitative observations that underscore the positive impact of the initiative.

Quantifiable measures, including the number of trees planted, survival rates, and environmental

assessments, showcase the tangible growth and environmental improvements brought about by the program. The active participation of the AIPS community, documented through attendance records and community engagement, underscores the success of the initiative in fostering a sense of collective responsibility for the environment.

Inauguration of "Green belt plantation drive" on the eve of World Environment Day by AIPS students and faculty

AIPS students actively engaged in the green belt plantation drive on the eve of environment day

The faculty and students of AIPS are actively engaged in an eco-greening campaign to contribute towards sustainable environmental efforts.

Certification & Inspection

Certificate of Registration

This is to certify that the

Requirements for performing inspection

of

ENVIRO KAMKAR LLP

at

6-20-24/60, EAST POINT COLONY, VISAKHAPATNAM- 530 017 – ANDHRA PRADESH, INDIA

has been independently assessed and is compliant with the requirements of:

ISO/IEC 17020:2012

For the following scope of activities:

Environmental Audits, Energy Audits, Green Audits and Environmental Compliance Assessment.

Certificate Number: UQ - 2022082258

Validity of this certificate can be verified at www.ukcertifications.org.uk/verify

Date of Initial Registration	23rd August 2022
Date of this Certificate	21st August 2023
2nd Surveillance Audit Due	22nd August 2024
Certificate Expiry	22nd August 2025

Authorised Signatory

UKAF

UK Certification & Inspection Ltd.

GREEN AUDIT ASSESSMENT & RANKING CRITERION

#	Audit Components	WA	Rec. Score					Max. Score
			A	B	C	D	TOT	
1	Policy and Program development	10	3	2.5	2.5	2	10	10
2	Land use and Land Cover Mgmt.	15	3	2	2	3	10	15
3	Water Management	15	2	3	3	2	10	15
4	Energy Management	15	2	3	3	2	10	15
5	Wastes Management	15	2	3	3	2	10	15
6	Green Initiatives	10	2	3	3	2	10	10
7	Participation Levels	10	2.5	2.5	2.5	2.5	10	10
8	BMPs & Green Skills Development	10	2	2.5	2.5	3	10	10
summary		@	18.5	21.5	21.5	18.5	80	**100**

A. Approved Plans for desired out comes: (18.5)
B. Book Keeping: (21.5)
C. Periodical Monitoring (21.5)
D. Out Put levels (18.5)

Category	% Range
AA	➢ **90**
A++	**80 – 89**
A+	**70 – 79**
A	**60 – 69**
B+	**50 - 59**
B	**40 - 49**
C	**< 40**

GREEN AUDIT REPORT

AVANTHI INSTITUTE OF PHARMACEUTCAL SCIENCES

BY ENVIRO KAMKAR LLP

CONTENT

ABBREVIATIONS USED

AIPS	Avanthi Institute of Pharmaceutical Sciences
AIET	Avanthi Institute of Engineering and Technology
AES	Avanthi Educational Society.
AICTE	All India Council for Technical Education
APSRTC	Andhra Pradesh State Road Transport Corporation
C	Carbon
PW	Plastic Waste
Ca	Calcium
CO_3	Carbonates
DO	Dissolved Oxygen
E waste	Electrical & Electronic Waste
EC	Electrical Conductivity
EKL	Enviro Kamka3r LLP
Fig.	Figure
Fe	Ferrous ion
GHRDC	Global Human Resource Development Centre
ha	Hectare
HCO3	Bicarbonates
Hp	Horse Power
HSD	High Speed Diesel
HW	Hazardous Waste
ISO	International Standards Organization
JNTUK	Jawaharlal Nehru Technological University Kakinada
K	Potassium
kg	Kilo Grams
KL	Kilo litres
KLD	Kilo litres Day
km	Kilo Meters
KVAh	Kilo volts amps per hour
KW	Kilo Watts
LPG	Liquefied Petroleum Gas
lph	Litres pern hour
M Tech	Masters of Technology
Mg	Magnesium
MSW	Municipal Solid Waste
Na	Sodium
NAAC	National Assessment and Accreditation Council

NBA	National Board of Accreditation
NCC	National Cadet Corps
NSS	National Service Scheme
pH	Potential of Hydrogen
PW	Plastic Waste
RO	Reverse Osmosis water plant
SO Carbon	Soil Organic Carbon
sq m	Square meter
TA	Total Alkalinity
TDS	Total dissolved solids
TH	Total Hardness
UGC	University Grants Commission

GREEN AUDIT TEAM

ESTD : 2005

Enviro-Kamkar

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

ENVIRO KAMKAR LLP

As External Auditor

K.SRINIJA APARNA

K.S.S.KARTHIK

&

As In-house Team

Dr. T. Rushi, Asst. Professor (Department of Pharmacy Practice)
Dr. V.C. Randeep Raj, Asst. Professor (Department of Pharmacy Practice)

Student Members:

Ms. A.Rohitha (B.Pharm. 2nd year)

Ms. Ch. Gowthami (B.Pharm. 2nd year)

ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

ENVIRONMENTAL POLICY

The Avanthi Institute of Pharmaceutical Sciences (AIPS) reiterates its dedication to actively participate in the advancement of sustainable development for the nation and the advocacy of eco-friendly technologies via its educational, research, consultancy, and extension initiatives. Our goal is to nurture a community that is environmentally aware and adaptable to climate change, striving towards this vision through a comprehensive approach encompassing curricular, co-curricular, and extension activities.

AIPS is committed to providing its students, faculty, supporting staff, institute associates, and the local community with the requisite knowledge and competencies to act responsibly in relation to the environment. We strive to formulate educational programs designed to instill a profound sense of environmental consciousness, enabling individuals to make well-informed decisions that positively impact sustainability.

Beyond academic endeavors, we actively participate in research and consultancy initiatives dedicated to the advancement of sustainable technologies and solutions. Through the cultivation of a culture characterized by innovation and collaboration, our goal is to tackle urgent environmental challenges and contribute to the creation of a more eco-friendly and sustainable future.

AIPS is dedicated to metamorphosing its campus into an eco-friendly environment that mirrors our unwavering commitment to sustainability. Our endeavor is to infuse nature and environmentally conscious principles into all decision-making processes across all levels. This encompasses the integration of eco-friendly practices into our infrastructure development, energy management, waste disposal, water conservation, and transportation systems.

In pursuit of our objectives, we actively pursue collaborations with leaders in the industry, governmental agencies, and environmental organizations. Through cooperative efforts and the exchange of expertise, we aim to magnify our influence and promote sustainable development within and beyond our institution. AIPS aspires to emerge as a shining example of sustainability, serving as a paradigm for other educational establishments. We firmly hold the conviction that by advocating for sustainable practices and embracing cutting-edge technologies, we can contribute significantly to the overall welfare of society, safeguard our natural resources, and craft a brighter future for future generations.

Environmental Policy is adapted on this day, the 5th of June 2021 at Avanthi Institute of Engineering & Technology, Cherukupally Village, Bhogapuram Mandal, Vizianagaram, Andhra Pradesh 562

1.PREAMBLE

Avanthi Institute of Pharmaceutical Sciences (AIPS), introduced in 2005, has gracefully evolved as a member Institutions of Avanthi Educational Society (AES), at Visakhapatnam, conceived in 1991 by the visionary philanthropist Sri M. Srinivasa Rao. The society has been a steadfast proponent of quality education for over 15 years through AIET (Avanthi Institute of Engineering and Technology) and AIPS. Ever since its inception, AIPS has strived to stand as one of the premier institutions in the domain of pharmaceutical sciences, earning recognition from the Indian Pharmaceutical Association (IPA) for its unwavering commitment to excellence.

Mirroring the national goals and missions, AIPS aligns itself with the AES's policy of dedication to make the campus a *green and environment friendly*. AIPS takes pride in initiating a comprehensive green audit and entrusts it to Enviro Kamkar LLP (EKL), a startup company of environment consultants, groomed and incubated by IIM(B) & NSRCEL. The audit aims to understand the impacts of the AIPS's efforts in the protection of Nature and Environment, along with the contributions to national SDGs (Sustainable Development Goals).

2.ABOUT AIPS

AES was initiated with a vision to provide fair access to higher education to the students of the North Andhra region. The campus of AIPS was located at Cherukupalli, a semi-urban area situated near Thagarapuvalasa, Vizianagaram district, Andhra Pradesh, and is equidistance between the two cities of Visakhapatnam and Vizianagaram. The location was within reach of 2 hrs from most places in the north Andhra region.

AES has a sprawling campus at Cherukupally, and the campus is being shared by AIET and AIPS. Besides academic and administrative blocks, the two institutions share common facilities like, play grounds, a library, and other amenities that were specifically dealt with at relevant places in this report.

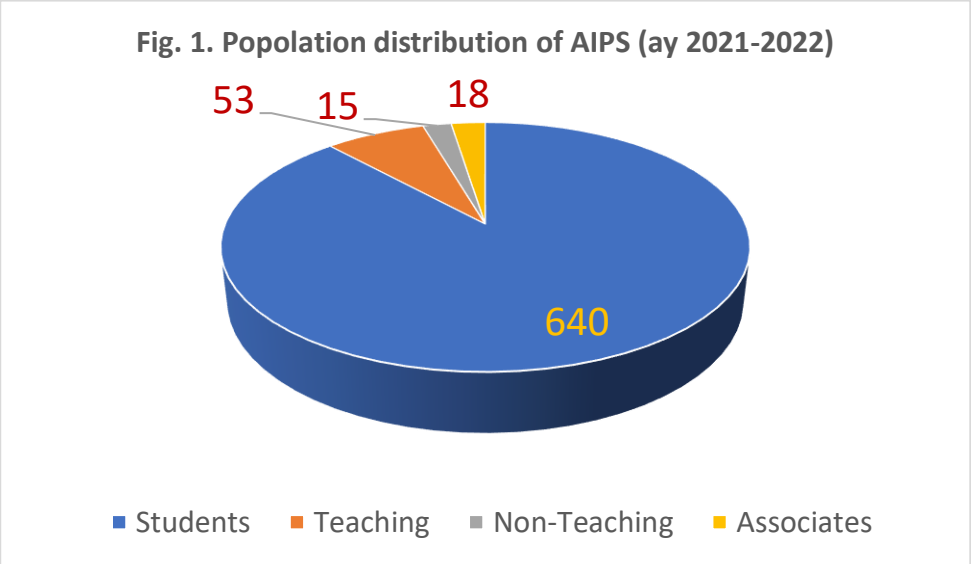
AIPS, ever since its inception in the year 2005, was an affiliated institution of Jawaharlal Nehru Technological University Kakinada (JNTU-K), and in the year 2023, the affiliation was transferred to Jawaharlal Nehru Technological University Gurazada Vizianagaram (JNTU GV) following the bifurcation of JNTUK. AIPS has obtained approval for affiliation with and accreditation by the Pharmacy Council of India (PCI), effective from September 20, 2022.

The institute offers four degree programs: (1) B. Pharm with an annual intake of 100 students;

(2) M. Pharm in four specializations [Pharmaceutical Analysis; Pharmacology; Pharmaceutics; **and Pharmaceutical Technology] with an annual intake of 15 students per specialization; (3)** Pharm. D with an annual intake of 30 students; and (4) Pharm D (PB) with 10 seats. The student's mobility from these courses, as was evident from the institution's records was promising and appreciable.

2.1. CAMPUS POPULATION:

The AIPS community is a non-resident community, and can broadly be considered under four categories: (1) Students; (2) Teaching Staff; (3) Non-teaching Staff; and (4) Associated personnel. The general size of all these categories together was 726 individuals for the AY 2021-2022.



As shown in Fig. 1, Students make up around 88% of the population, teaching faculty account for 7%, and the remaining 5% represent non-teaching staff and Associates (who are not employees of the institution, but render various services to the college). As shown in Fig. 1, Students make up around 88% of the population, teaching faculty account for 7%, and the remaining 5% represent non-teaching staff and Associates (who are not employees of the institution, but rendering various services to the college). As shown in Fig. 1, Students make up around 88% of the population, teaching faculty account for 7%, and the remaining 5% represent non-teaching staff and Associates (who are not the employees of the institution, but rendering various services to the college).

The *Quality Policy* of AIPS states "Avanthi Institute of Pharmaceutical Sciences , emphasizes the ethical ideas to impart advanced training by creating the best possible infrastructure engaging and activity-oriented teaching. The quality policy typically focuses on ensuring excellence in

education, research, and professional development. It may highlight adherence to regulatory standards, continuous improvement, and the cultivation of a supportive learning environment to achieve academic excellence through innovation and discipline.

3.SCOPING OF GREEN AUDIT

The scope of a Green Audit evaluates the impacts of the practices of the institutions on various environmental components and goes beyond defining the state of environmental components. The audit should help the management in the sustainable use of natural resources and minimization of wastes and pollution. Institutions of higher learning shall have the mandate to inculcate environment friendly culture among the students through different activities. Thus, the scope of this Audit includes the following:

1. Environmental Component Assessment: The Green Audit assesses the uses and use practices of the institution with reference to Land, water, energy, along with quantifying the wastes generated, emissions discharged and the quality of the environment;
2. Environmental Policy Compliance: The Audit also focuses on the institution's compliance to the Institution's Environmental Policy and the policies of the AICTE and NAAC;
3. Year-to-Year Comparison: The Green Audit enables the institution to analyse its environmental performance over different years;
4. Education and Awareness: The Green Audit serves as an educational tool, raising awareness among students and employees about environmental issues and promoting a culture of sustainability. It helps in instilling environmental responsibility and inspiring individuals to contribute to a positive environmental change.
5. Improvement Prioritization: Through the Green Audit, areas for improvement are identified, allowing the institution to prioritize future projects and initiatives. This enables the institution to allocate resources effectively and implement measures that will have the most significant impact on environmental and economic performance.

3.1. GOAL AND OBJECTIVES OF GREEN AUDIT:

The primary goal of green audit is to mitigate resource wastage, enhance resource quality, and promote sustainable practices among the campus community and the wider public. The specific objectives of green auditing include:

1. Adopt eco-friendly Land use and ensure sustainability;
2. Document Biodiversity of the campus and propose measures to enhance biodiversity with native species;
3. Develop water resources and promote water conservation;

4. Regulate energy consumption, achieve energy efficiency, and promote use of Renewable Energies;
5. Regulate waste generation at source, evolve innovative recycling and reuse and adopt safe disposal methods.
6. To ensure all AIPS members are environment conscious.

By achieving these specific objectives, the green audit aims to contribute to the overall goal of improving the environmental performance of the institution and fostering a culture of sustainability among its stakeholders.

4. APPROACH TO GREEN AUDIT

Elaborated deliberations were held involving the management, staff, and the team of the external auditors, M/s. EKR before initiating the audit programme. AIPS initiated its first-ever Green Audit and the audit reporting period was aligned with the academic year, i.e. from June to May every year. Thus, the first reporting period was from June 2020 to May 2021. The entire process was divided into three stages:

A) *Pre-Audit Stage*: Chaired by the Principal of the Institution, the GA Team was formed, comprising five Core Members (three from the institution and two from the third-party consultant organization, EKR). The institutional members engaged department and unit heads from various wings of AIPS, including teaching, administrative, and allied units. During this stage, GA protocols, requirements for collecting audit evidence, and implementation schedules were prepared;

B) *Audit Stage:* This stage involves the day-to-day collection and validation of audit evidence, necessitating systematic record-keeping and database development. Given that this was AIPS's inaugural audit, the core team reviewed procedures and methods in detail. The validation of GA evidence was streamlined, focusing on key sectors such as land use, water, air quality, greenery, waste generation, and proper disposal. EKR conducted training and awareness programs for students, teaching staff, and supporting staff. The audit results were analysed and was presented to the Management of AIPS.

C) *Post-Audit Stage:* This stage entails the management's review of the GA report and the issuance of terms of reference to initiate next year's Green Audit.

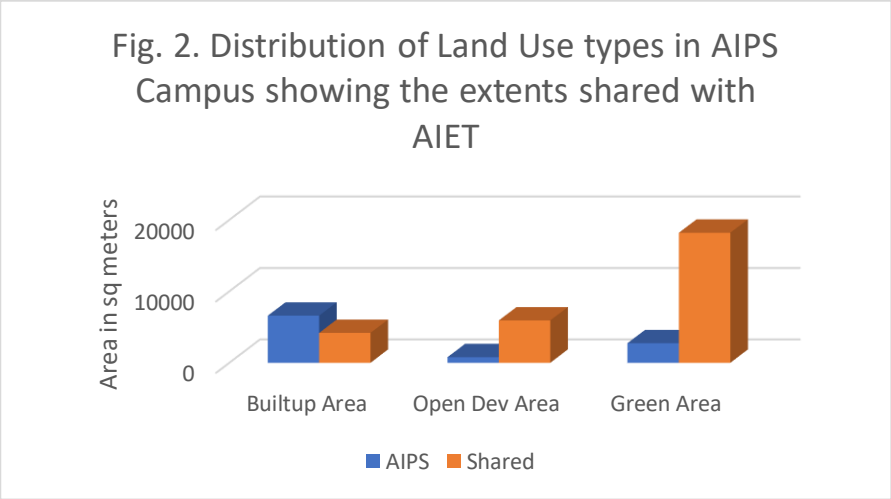
In summary, the GA was conducted in three phases and This being the first ever Green Audit for AIPS,the collection of audit evidences has become a major challenge. However, for subsequent audits, the book keeping practices were initiated as proposed by M/s. EKR, ensuring a comprehensive assessment and documentation of the institution's environmental performance.

5. GREEN AUDIT

This being the FIRST ever Green Audit for the AIPS, the report needs to be treated as the Audit base line data, and the AY year 2021-22 as the Base year for the Green audits. The findings of the Audit are reported below after due validation by the audit team.

5.1. LAND USE AND LAND UTILIZATION

AIPS along with its sister institution, AIET (Avanthi Institute of Engineering & Technology share a campus of around 5 hectares, at *Cherukupally* village, near Thagarapuvalasa, Vizianagaram district. As part of their good management practices, both the institutions though are housed in separate constructed structures for academic and administrative purposes, they share the premises and other common amenities like play grounds, library, auditorium and other infra facilities. Thus, the total campus has over 49% of the land under Open category, enabling the land to perform ecosystem services. The distribution of the land use categories is presented in Fig. 1 below:



AIPS has an area of 2.5 acres (10117 m^2) area registered in its name, of which over 65% (6595 m^2) is the built-up area housing academic and administrative blocks. Of the remaining 786 m^2 area was under roads, paths and opens, while 2736 m^2 area is marked as a green area. In addition to its own land, it shares significant of land and developed areas with AIET, which is its sister institution and both the institutions are constituted under the same Society, AES. The shared area under the Built up category accounts for 4182 m^2 which includes an Auditorium, student facilities and library; The shared area under Open Developed category accounts for 5928 m^2 and, includes play grounds, parking area, etc.; and the shared area under the Greens category

accounts for 18200 m^2. Thus in addition to the 10117 m^2 area of AIPS, the institution is legitimately sharing another 28310 m^2 of area with the AIET.

5.2. VEGETATION AND BIODIVERSITY

The area under Greens available for the AIPS is at 0.2736 ha only, in addition to this an extent of 1.82 ha green area is being shared with the AIET. Since 87% of the area under Greens is shared one, the biodiversity and vegetation surveys carried out for the AIET was validated for the use by AIPS as the area green development is the outcome of both the institutions.

A. *FLORA & PLANT DIVERSITY*:

The flora of the campus comprises 39 species belonging to 34 genera and 17 families. Of these 18 were tree species and 19 were herb species, while shrubs were recorded with only two species. Among herbs and shrub species, exotic ornamental species were not taken into account. The list of plant species recorded is presented in Annexure I.

There were eight fruit bearing species and the overall *Maximum Possible Diversity* of the campus was at 3.664 bits as per the Shannon-Weiner Index. The *Actual Species Diversity* of tree species was at 2.609 bits with a *Species Evenness* of 0.903, indicating good distribution.

B. *BIOMASS OF TREES*:

The number of trees in the developing stages were recorded at 160, and within three years most of them will be contributing to the tree cover. Presently, 363 matured trees are existing in the campus. For the purpose of Trees biomass, only the matured trees were taken into consideration. Based on the girth and height of the trees enumerated, by using the standard ecological methods, the biomass of the trees for the 18 species was estimated at 26.35 tons in the AY 2021-2022 (Table 1).

Table 1. Tree species Enumeration and Biomass (Dry Weight).

T No.	Species	Mean GBH (cm)	Mean Ht (m)	Population	Total BM (Tons)
1	Mangifera indica L.	40.5		18	1.747
2	Borassus flabellifer L.	40		44	4.571
3	Cocos nucifera L.	31		19	1.054
4	Wodyetia bifurcate A.K. Irvine)	38		62	4.522
5	Conocarpus Erectus L.	27		23	1.530
6	Terminalia catappa L.	43		16	1.921
7	Acacia leucophloea (Roxb.) Willd.	28		3	0.117
8	Caesalpinia pulcherrima (L.) SW.	36		29	1.899

9	Tamarindus indica L.	40	22	1.524
10	Tectona grandis L. f	30.5	11	0.812
11	Azadirachta indica A. Juss	27	13	0.616
12	Ficus religiosa L.	39	1	0.077
13	Syzygium cumini L. Skeels	59	12	1.809
14	Neolamarckia cadamba (Roxb.) Bosser	53	7	1.135
15	Artocaarpus Heterophyllus	37.5	4	0.263
16	Acacia Aneura	30.5	29	1.454
17	Saraca Asoca	22	40	0.978
18	Sapodilla	22.2	10	0.339

C. CARBON STOCKS IN BIOMASS:

The Carbon stocks in the trees of AIPS campus were estimated using standard stock assessment methods. The general default value of 48% of the Dry weight recommended for tropical trees was adopted and thus the C stocks from the tress was arrived at 12.657 tons. Added to this, another 47 tons of C was present ion the soils. Thus, the total C stock in the AIPS Campus was estimated at 60 tons.

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D. MAJOR FAUNA:

The campus vegetation at AIPS serves as a habitat for various animal species, providing a home for diverse wildlife. During a single day's inventory, over 20 species were observed, as listed in Annexure-II. The most common bird species found on campus is the Common Myna, while the presence of numerous butterfly species adds to the enchantment. In addition to these natural inhabitants, the campus supports a range of other fauna.

5.3. WATER RESOURCES MANAGEMENT

AIPS sustains a daily community of over 600 individuals, encompassing both educators and support staff alongside students, resulting in a water requirement of around 30 KLD (Kilo Liters per Day). The college predominantly depends on groundwater reservoirs to meet this demand. The campus is equipped with two borewells, each linked to distinct overhead tanks strategically positioned in academic and administrative blocks. These overhead water storage units collectively possess a total capacity of 10 KLD. It is noteworthy that during holidays and vacation

periods, the water demand diminishes by more than 50%. A water quality analysis conducted on the four borewells revealed that the water from one borewell closely aligns with prescribed standards set by IS 10500 for drinking water use, with the exception of elevated TDS levels.

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The total water consumption of the REC can be classified into three use types:

1. Academic and administration
2. Transportation and Other utilities
3. Greenery

AIPS has a total of 2 tanks, each with a capacity of 5000 liters (10,000 liters in total), are used for daily tapping purposes. Additionally, there is one RO (Reverse Osmosis) plant, with a capacity of 1000 liters. The campus obtains water from 2 bore wells. The academic and administrative areas consume approximately 15 KLD (Kilo Liters per Day) of water, while the canteen, garage, workshops, and other sites require an additional 8 KLD. The gardens and green zones need about 7 KLD of water, of which 4 KLD is sourced from RO reject waters. Overall, AIPS utilizes 85 KLD of groundwater on all working days.

The RO water plant produces 3 liters of waste water for every 1 liter of treated water. On working days, approximately 4 KLD (Kilo Liters per Day) of water is rejected. The rejected water is collected in a tank and used for gardens and green areas. The sewage from all blocks is directed to soak pits and septic tanks, as there are no activities generating toxic waste. In the Wet laboratory, where chemicals are used, the laboratory sinks are connected to effluent collecting cans with a capacity of 250 liters. Every two months, the effluent water is disposed of through authorized collectors.

5.4. WASTES MANAGEMENT

Waste management initiatives of AIPS prioritize the appropriate handling and disposal of various waste categories in accordance with the Environmental (Protection) Act, 1986. The waste is categorized into four main types: solid waste (MSW), plastic waste (PW), hazardous waste (HW), and e-waste. However, based on the population-specific data from AIPS, the overall waste

consumption might differ from AIET. Understanding the dynamics of waste management and production on a per capita basis could reveal variations in waste generation and handling practices, potentially highlighting the impact of individual behaviours and consumption patterns on the overall waste management landscape.

All the wastes generated are quantified based on the weekly basis, from which the daily averages were worked out. For the purpose of safe disposal of the wastes, the wastes are collected separately as shown in Table 2 below:

Table 2. Management of different Wastes in AIPS campus for AY 2021-22.

#	Waste Type	Gen.Sources	Gen. Rate	Disposal Practice
1	Wet Waste	Dining Halls; Waiting Rooms; Canteen	4 kg/day	Composted
2	Paper & Package	Academic and administrative blocks; Labs; Workshops	2.1 kg/day	Authorized collectors
3	Metallic & Glass Wastes	Laboratories & Admin blocks	4.5 kg/month	Innovation Hub + Authorized collectors.
4	Plastic Wastes	All Blocks	0.34 kg/day	Innovation Hub + Authorized collectors.
5	Sanitary Wastes	Labs and Wash Rooms	0.3 kg/day	Incinerated
6	E-Wastes	Academic and Admin blocks	< 1 kg/ month	Innovation Hub + Authorized collectors.

6.ENVIRONMENT AUDIT

AIPS ever since its inception recognized the importance of environmental protection and providing environmental education to its students and through them conducting environmental awareness programmes in the surrounding villages. Besides following the AICTE recommended components for the students and institutions of technical education, to enable the building of the nation and ensure Sustainable Development, AIPS has adopted its own Environmental Policy in the year 2021.

6.1. Curricular Inclusions

All the graduate students of Pharmaceutical sciences, during their first year and in the 2nd Semester shall undergo a course in Environmental Sciences. Though there were no recommended practical for this paper, AIPS, as per its policy assign several environmental related small projects like, waste management, water conservation and quality, etc. Through this paper several awareness and environmental activities were conducted as *Green Initiatives* during the AY 2021-22 and are as follows (Annexure 5):

1. *Boosting the Utilization of E-Vehicles in the AIPS Campus;*
2. *Limiting Vehicle access to promote an environmentally conscious campus;*
3. Conduct of Swachh Bharat campaign in Chrukupalli village;

6.2. Environmental Activities

A. *Environmental Awareness Program:* Every year, AIPS organizes an Environmental Awareness Program as part of the induction process for newly admitted students. This program aims to familiarize them with Nations environmental policy, engage them in environmental activities, raise awareness about environmental responsibilities, and highlight the importance of sustainable development. In this audit year, the program was conducted for students, where they had the opportunity to discuss various environmental aspects based on their interests and to interact with the expert environmentalists.

B. *Student Webinars on Environment:* During the AY 2021-22, monthly webinars on various facets of environment were conducted, where in the students were given wide opportunity to present their works and views. The webinars were organized by the Environmental Sciences wing of the AIPS. Over all FIVE webinars were conducted on different Environment Friendly Technologies.

6.3. Environmental Indices

For the purpose of measuring the impact of the environmental management practices and to understand the performance, a set of Environmental Indices are developed and are presented below. This AY, 2021-22 being the first ever audit, will be the base audit year and the indicators need to be monitored every year to perceive the change. The indicators developed and measured are as presented below:

No.	Indicator	2021-2022	Remarks
LAND USE			
1	Total Geographical Extent (m^2)	10,117	
3	Built up Area (m^2)	6593	
4	Per capita built-up Area (m^2)	9.08	
WATER RESOURCES			
9	Total Water Consumption	30 kld	
10	Per capital Water Consumption	41.32 l/day	
11	Waste Water RRR	3 kld	
ENERY RESOURCES			
12	Total Energy Consumption	151531 KW	
13	Per Capita Energy Consumption	209 KW	
14	Solar as % of total consumption	10 %	
15	Direct consumption of HSD	600 l/annum	
16	Direct Consumption of LPG	14 kg/annum	
WASTE MANAGEMENT			
17	Wet Waste Generated	4 kgs/day	
18	Dry Waste Generated	2.1 kg/day	
20	Plastic Waste Generated	0.15 kg/day	
21	E-Waste Generated	0.03 tons	
CARBON FOOT PRINT			
22	Total C emissions/annum	204.958	
23	C emissions offset (Solar)	13.563	
24	Net emissions/annum	191.395	

6.4. STATUS OF ENVIRONMENTAL COMPLIANCES:

AIPS, being one of the lead pharma educational institutions of Andhra Pradesh and has demonstrated its commitment to the environmental protection and by meeting the statutory requirements and social obligations related to Environment. Towards these different parameters for compliance were identified and the compliance status was graded as shown in Table below:

Table: Status of Environmental indicators of Compliance of AIPS for AY 2021-22.

No.	Compliance Head	Rank	*Ranking*
1	Maintaining Height of DG Set Stacks	*****	* = Aspirant ** = Improving *** = Moderate **** = Good ***** = BEST
2	GWB permissions	*****	
3	PUC certificate for vehicles	*****	
4	E waste Rules	***	
5	Green Building Norms	***	
6	Use of Renewable energy	*****	
7	Solid Waste management Rules	***	
8	Plastic Waste Management Rules	***	
9	Energy Efficiency	**	

7.RECOMMENDATIONS FROM GREEN AUDIT

*Based on the Green Audit findings and the specific observations made during this **First Green Audit** for the AIPS, the following recommendations are proposed for implementation and greater contribution to the sustainable development:*

1. *The institute has vast scope in mainstreaming the Environment and Sustainability in the academic and administrative decision makings. It is highly appreciable that the Institution's Environmental Policy provides wide scope for the same;*

2. *The institute should develop necessary **Book Keeping** procedures for monitoring the environmental indicators and to provide as valid audit evidences;*

3. *The institute has to develop long term plans for improving the Biodiversity and Ecosystem services from the land parcel they control by involving students, staff and other associates of the institute;*

4. *The institute's dependency on the grid power can be reduced significantly by maximizing the Solar power generation. It is highly appreciable that the Institute is promoting E-vehicles use in the campus; and also the use of mass transportation by more than 80% members of the institution;*

5. *There is great scope for improvement in the Wastes Management sector, and it is recommended to constitute a team to develop appropriate plans specific to waste type;*

6. *The institutions efforts in motivating the students and involving them in the environmental activity is commendable and a great strength to the institution to make the campus Carbon neutral and demonstrate Sustainability.*

@@@@@@@@@@@@@@@

Annexure I

Flora species of AIPS during 2021 - 2022

No.	Family	Species	Habit*	Common/Telugu Name
1	Acanthaceae	Peristrophepaniculata(Forssk). Brummitt	H	Cheburu
2	Amaranthaceae	Achyranthes aspera L.	H	Uttareni
3	Amaranthaceae	Alternanthera paronychioidesSt.	H	Ponnaganti
4	Amaranthaceae	Alternanthera sessilis	H	Ponnaganti
5	Amaranthaceae	Amaranthus virdis L.	H	Chilaca thotakura
6	Asteraceae	Ageratum conyzoides L.	H	PokaBanthi
7	Euphorbiaceae	Euphorbia hirtaL.	H	Nanubalu
8	Fabaceae	Cassia obtusifoliaL.	H	Tagirasa
9	Fabaceae	Crotalaria calycinal	H	
10	Fabaceae	Tephrosia purpurea (L.) Pers	H	Vempali
11	Malvaceae	Sida acuta BurmF.	H	
12	Piperaceae	Piper Betle	H	
13	Malvaceae	Sida cordifolia L.	H	
14	Nyctaginaceae	BoerhaviaeAIETtaL.	H	Punarnava
15	Fabaceae	Acacia Aneura	T	Mulaga
16	Fabaceae	Acacia catechu (L.f.) Willd	S	
17	Malvaceae	Hibiscus rosa-sinensis L	S	Mandara
18	Anacardiaceae	Mangifera indica	T	Mango
19	AAIETaceae	Borassus flabellifer	T	Thati
20	AAIETaceae	Cocos nucifera	T	Coconut
21	AAIETaceae	Wodyetiabifurcata	T	Foxtail palm
22	Combretaceae	**ConocarpuseAIETtus**	T	Conocorpus
23	Combretaceae	Terminalia catappa	T	Badam
24	Fabaceae	Acacia leucophloea(Roxb.) Willd.	T	Tellathumma
25	Fabaceae	Caesalpinia pulcherrima	T	Gulmohor
26	Fabaceae	Tamarindus indica	T	Chintha
27	Lamiaceae	Tectona grandis	T	Teak

28	Meliaceae	Azadirachta indica	T	Neem
29	Moraceae	Ficus benghalensis	T	Marri
30	Myrtaceae	Syzygiumcumini	T	Neeredu
31	Rubiaceae	**Neolamarckiacadamba**	T	Kadambari
32	Moraceaae	**Artocaarpus Heterophyllus**	T	Panasa/Jackfruit
33	Fabaceae	**SaracaAsoca**	T	Ashoka trees
34	Moraceae	**Ficus Religiosa**	T	Raavi
35	Sapotaceae	**Sapodilla**	T	Sapota

2. Tree Enumeration and Biomass Stock at AIPS Campus during AY2021-2022

TNo.	Species	Mean GBH (cm)	Mean Ht(m)	Population	TotalBM (Tons)
1	MangiferaindicaL.	43	8	18	1.921
2	Borassusflabellifer	42	10	44	5.601
3	Cocosnucifera	31	9	19	1.186
4	Wodyetiabifurcate	40	7	62	5.011
5	Conocarpuserectus	33	9	23	1.627
6	Terminaliacatappa	45	10	16	2.338
7	Acacialeucophloea	34	7	3	0.175
8	Caesalpiniapulcherrima	37	7	29	2.005
9	Tamarindusindica	42	7	22	1.960
10	Tectonagrandis	32	12	11	0.975
11	Azadirachtaindica	28	10	13	0.735
12	Ficusreligiosa	41	7	1	0.085
13	Syzygiumcumini	62	7	12	2.330
14	Neolamarckiacadamba	55	8	7	1.222
15	Artocaarpusheterophyllus	41	7	4	0.340
16	Acaciaaneura	33	7	29	1.595
17	Saracaasoca	25	8	40	1.443
18	Sapodilla	31	7	10	0.485

Annexure II

S.no	Common name	Scientific Name	Type
AMPHIBIAN			
1	Common frog	Rana spp	Frog
REPTILES			
1	Tree Gecko	Hemidactylus sp	Lizard
2	Wall lizard	Hemidactylus prashadi	Lizard
3	Garden Lizard	Calotes versicolor	Lizard
BIRDS			
1	Red-vented bulbul	Pycnonotuscafer	Diurnal Birds
2	House Sparrow	Passer domesticus	Diurnal Birds
3	Common Myna	Acridotheres tristis	Diurnal Birds
4	Crow	Corvus corvidae	Diurnal Birds
5	Common Cuckoo	Cuculuccanorus	Diurnal Birds
6	Cattle Egret	Bubulcus ibis	Diurnal Birds
7	Rose ringed Parakeet	Psittaculakrameria	Diurnal Birds
8	Black Drongo	Dicrurusmarcrocerucus	Diurnal Birds
9	King fisher	Alcedinidae	Diurnal Birds
10	Eagle	Accipitridae	Diurnal Birds
MAMMALS			
1	Squirrel	Sciuridae	Squirrel
2	House Rat	Rattus rattus	Rat
BUTTERFLIES			
1	*Plain Tiger*	*Danaus chrysippus*	*Insects*
2	The Gram Blue	Euchrysopscnejus	Insects
3	Common Baron	Euthaliagaruda	Moth
4	Common Cerulean	Jamidesceleno	Moth
5	Common sailor	Neptishylas	Moth
6	The Blue Tiger	Tirumala limniace	Moth

Annexure III

Pre-monsoonWaterQualityoftheGroundwatersofAIPS2022

No.	Parameter*	BW-1	BW-2	BW-3	BW-4	IS10500
1	pH	7.2	7	7	7.5	6.5-8.5
2	EC	243.8	247.8	247.5	250	500
3	TDS	540	568	610	535	512
4	TH	212	215	222	221	300
5	Ca	61	60	60	63	75
6	Mg	22	21.4	23	22	30
7	Na	11	14	16	12	200
8	K	8	7	8	8	10
9	Fe	0.05	0.05	0.05	0.1	0.3
10	Cl	110	123	132	100	250
11	PO_4	1	0.8	0.7	0.7	10
12	NO_2	0.03	0.03	0.03	0.03	1
13	F	0.4	0.4	0.5	0.4	1.2
14	TA	128	129	132	132	200
15	CO_3	36.1	30.2	31.1	30.3	---
16	HCO_3	229	227	227	223	---
17	DO	3	2.7	2.7	3.2	4.8

=All parameters are in mg/l, with the exception of pH

Annexure IV

Green Initiatives

ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTUK-Kakinada)
Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.
www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Cherukupally,

Date: 16-03-2022

Circular

This is to inform to the students and college members that the management has decided and implement "Boosting the utilization of E-vehicles in the campus": A green campus initiative has been drafted, planned and accepted for implementation in the campus by Green and Clean Campus Expert Panel. So, from here onwards all the students and faculty are requested to follow this initiative and be a part of successful implementation. We are planning to practice this for improving the environment and health.

PRINCIPAL

Circulated to:

1. All HOD's (Pharm.D, B.Pharmacy).
2. Class teachers of Pharm.D.
3. Class teachers of B.Pharmacy.
4. Class teachers of M.Pharmacy.
5. Administrative Officer.

GREEN AND CLEAN CAMPUS INITIATIVES:

BOOSTING THE UTILIZATION OF E-VEHICLES IN THE CAMPUS [2021-2022]

1. **Title of the practice**: Boosting the utilization of E-vehicles in the campus

2. **Objectives:**
   - To reduce the noise pollution.
   - To decrease the campus's carbon emission by replacing traditional fuel-powered vehicles with electric ones.
   - To protect the environment and wildlife from the harmful effects.
   - To improve eco-friendly transportation options for students and faculty.
   - To encourage and promote sustainable transportation practices among campus residents and visitors.

3. **Context:**

The context for implementing E-vehicles on campus is rooted in the broader movement towards sustainability and environmental responsibility. Many institutions, including colleges and universities, have recognized the need to reduce their carbon footprint and contribute to a more eco-friendly future. Increasing awareness of climate change and environmental issues has driven the adoption of sustainable practices in various sectors, including higher education. E-vehicles can offer long-term cost savings due to reduced fuel and maintenance expenses, making them an attractive option for institutions seeking to optimize their budgets.

4. **Practice:**

To conduct a comprehensive assessment of the campus transportation needs. Identify areas where electric vehicles (EVs) can be effectively integrated. The entry of motor vehicles is restricted in the campus and only e-vehicles are allowed which is eco-friendly. Offer training to campus drivers and maintenance staff on EV operation and maintenance. Educate students and staff on the benefits of electric vehicles and encourage their use. Establish a system for user feedback to continuously improve the services offered by E-vehicles.

5. Evidence of success:

Reduction in pollutants resulting from the use of electric vehicles, comparing them to pollution from previous gasoline-powered vehicles. Decrease in noise pollution in the campus from electric vehicles compared to traditional vehicles. Track the usage and adoption rates of electric vehicles among students, faculty, and staff, showing a shift towards sustainable transportation choices. Highlight the integration of electric vehicle technology and sustainability concepts into the circular and notice boards in the campus, showing how the initiative supports educational goals.

6. Problems encountered:

Practice of electric vehicles and charging infrastructure is a vital problem encountered. Insufficient charging infrastructure can lead to long wait times and inconvenience for users, reducing the appeal of electric vehicles. Users may require education and training on how to operate and maintain electric vehicles, which can be a logistical challenge. Charging electric vehicles can be time-consuming, especially if fast-charging options are limited, potentially impacting the availability of the fleet.

Maintaining charging stations and keeping them operational can be an ongoing challenge that requires staff and resources. To address these problems, colleges must plan carefully, secure necessary resources, educate stakeholders, and continuously evaluate and adapt their electric vehicle initiatives to overcome challenges and ensure long-term success.

7. Resources required:

To address these problems, colleges must plan carefully, secure necessary resources, educate stakeholders, and continuously evaluate and adapt their electric vehicle initiatives to overcome challenges and ensure long-term success. Allocate resources for ongoing maintenance and repairs, to ensure consistent service. Implement software solutions to manage the electric vehicle fleet efficiently, including scheduling, maintenance tracking, and user management. Develop promotional materials to raise awareness about e-vehicles in the campus.

8. Conclusion:

Implementing E-vehicles on a college campus is a multifaceted endeavor with the potential for numerous benefits. It aligns with sustainability goals, reduces carbon emissions, and can

provide cost savings over time. Additionally, it serves as an educational opportunity, allowing students and staff to engage with cutting-edge electric vehicle technology and promote environmentally conscious practices.

Utilization of E-vehicles in the AIPS campus to maintain sustainable environment

ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

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Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.
www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Cherukupally,

Date: 30-05-2022

Circular

This is to inform to the students and faculty members that the management has implemented the rule for restricted entry of vehicles and parking: A green and campus initiative has been drafted, planned and accepted for implementation in the campus by Green and Clean Campus Expert Panel. So, from here onwards all the students and faculty members are requested to follow this initiative and be a part of successful implementation. We are planning this practice to reduce parking demand and enhance safety.

PRINCIPAL

Circulated to:

1. All HOD's (Pharm.D, B.Pharmacy).
2. Class teachers of Pharm.D.
3. Class teachers of B.Pharmacy.
4. Class teachers of M.Pharmacy.
5. Administrative Office

GREEN AND CLEAN CAMPUS INITIATIVES:

LIMITING VEHICLE ACCESS TO PROMOTE AN ENVIRONMENTALLY CONSCIOUS CAMPUS [2021-2022]

1. **Title of the practice**: Limiting vehicle access to promote an environmentally conscious campus
2. **Objectives**:

- To rreduce carbon emissions in the campus
- To encourage sustainable transportation within the campus
- To enhance air qquality
- To create pedestrian-friendly spaces
- To preserve Green Spaces

3. **Context**:

The context for implementing restricted vehicle entry and parking on a college campus is influenced by various factors, including the evolving needs and priorities of higher education institutions, the broader sustainability movement, and the desire to create a safe, efficient, and environmentally responsible campus environment. Campus traffic congestion and limited parking space can be persistent issues. These challenges impact the flow of traffic, the safety of pedestrians and cyclists, and overall campus accessibility..

4. **Practice:**

Conduct a comprehensive traffic analysis to identify traffic areas, congestion points, and areas that should be pedestrian-only or have restricted vehicle access. Engage with students, staff, faculty, and campus visitors to gather input and preferences regarding transportation and parking policies. Install access control measures like barriers, gates, or bollards at entry points to restricted zones and ensure enforcement. Align restricted vehicle entry and parking policies with broader sustainability initiatives and emphasize the environmental benefits of these changes.

5. Evidence of success:

Evidence of success in implementing restricted vehicle entry and parking on a college campus can be demonstrated through various quantitative and qualitative measures. Decrease in vehicle-related accidents and incidents in pedestrian-heavy zones, showing that the initiative has enhanced safety. Demonstrate decrease in the demand for parking spaces, indicating that the alternative transportation options have been successful in reducing car usage. Colleges should present a feedback to provide a comprehensive view of the success of their restricted vehicle entry and parking initiatives. This initiation will help reinforce the positive impact of these policies on the campus and its community.

6. Problems encountered:

Students, staff, and visitors may resist changes to established transportation and parking habits, leading to push back against new policies. Colleges may lack adequate public transportation options, bike infrastructure, or walk ability, making it challenging to provide viable alternatives to driving. Managing parking permits and allocating spaces can be complex, potentially leading to disputes or dissatisfaction among members of the campus community. Enforcing restricted vehicle entry and parking regulations can be resource-intensive and may require a dedicated security or enforcement team.

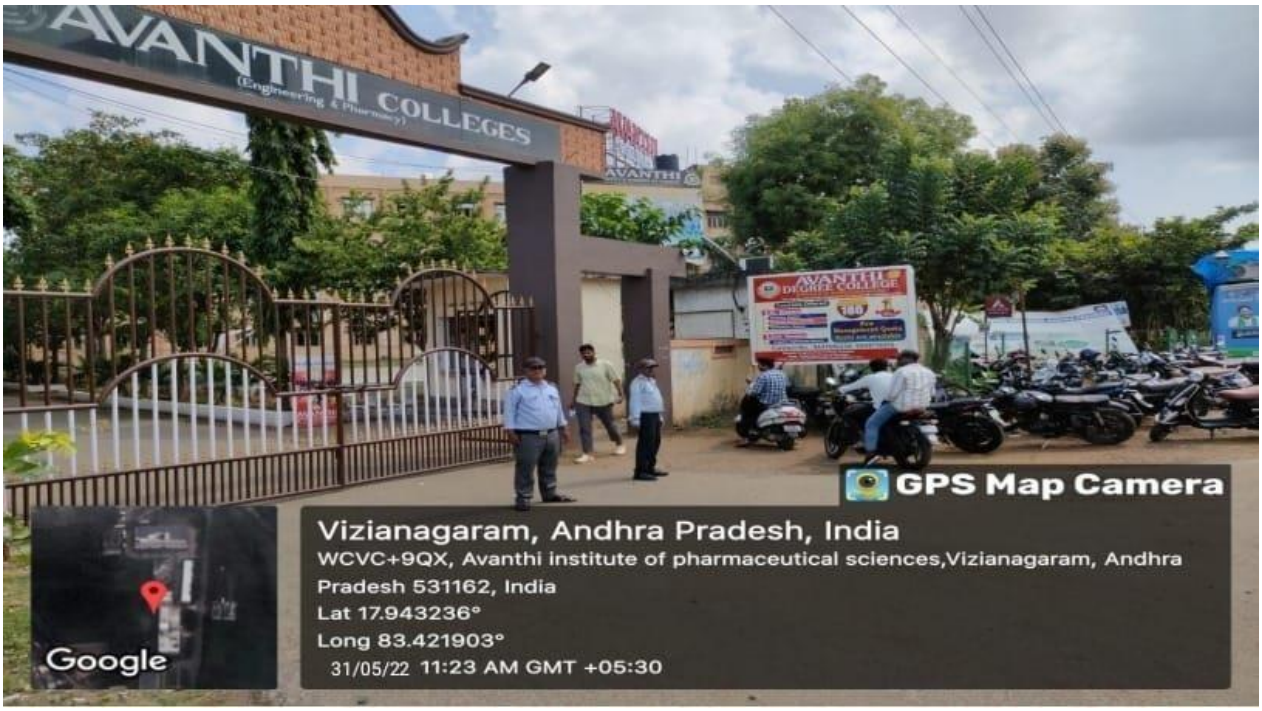
7. Resources required:

Implementing restricted vehicle entry and parking on a college campus requires a range of resources, including financial, human, and infrastructure. Resources to create pedestrian-friendly zones, bike lanes, pedestrian pathways, traffic signage, and other necessary infrastructure changes. Budgeting for the ongoing maintenance of infrastructure, including roads, parking lots, and pedestrian zones.

8. Conclusion:

By implementing restricted vehicle entry and parking on a college campus is a multifaceted endeavor that aims to enhance safety, reduce congestion, promote sustainability, and create an accessible and welcoming campus environment. By addressing the challenges and allocating the necessary resources effectively, colleges can achieve these objectives. Successful implementation requires careful planning, community engagement, and a commitment to continuous improvement. The evidence of success showcases reduced congestion, improved safety, increased use of sustainable transportation options, and enhanced accessibility.

The vehicle access into the AIPS campus is being restricted by security personnel in order to promote a sustainable environment.



Restricted entry of vehicles and parking into the campus to mitigate pollution within the campus premises.

Restricted Entry of Vehicles and Parking into the campus through signage boards to reduce amount of pollution inside the campus.

ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTUK-Kakinada)
Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.
www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Cherukupally

Date: 04-06-2021

Circular

This is to inform all the faculty members and the students that 4th Pharm.D students are organizing a "Green belt plantation drive" at East Zone of Main Campus of Avanthi Institute of Pharmaceutical Sciences. So, from here onwards all the members are requested to follow this initiative and be a part of successful implementation.

PRINCIPAL

Circulated to:

1. All HOD's (Pharm.D, B.Pharmacy).
2. Class teachers of Pharm.D
3. Class teachers of B.Pharmacy
4. Class teachers of M.Pharmacy
5. Administrative Officer

GREEN AND CLEAN CAMPUS INITIATIVES:

GREEN BELT PLANTATION DRIVE [2021-2022]

1. TITLE OF THE PRACTICE: Green belt plantation drive at Avanthi Institute of Pharmaceutical Sciences

2. BENEFITS OF TREE PLANTATION:

- Biodiversity Support: Trees provide habitats for various species, contributing to biodiversity and supporting diverse ecosystems.
- Soil Conservation: The root systems of trees help prevent soil erosion and enhance soil structure.
- Noise Reduction: Trees act as natural sound barriers , absorbing the deflecting noise, contributing to a quieter and more pleasant environment in the college surroundings.
- Aesthetic Value: Trees enhance the beauty of landscapes, making the campus more visually appealing.

3. OBJECTIVES:

- To enhance greenary in the campus.
- To increase the quality of air.
- To make the campus pollution free.
- To sensitize students towards the importance of plants.
- To establish a pleasant and enjoyable atmosphere.
- To motivate the staff and students through environmental literacy.
- To incorporate green protocol among students and staff.

4. ACTIVITIY:

The program was commenced by planting trees in East zone of Main Campus. A total of 25 pits have been made in which 25 small saplings have been planted by 4th Pharm.D students along with AIPS Principal-Dr.M.B.V.Raju and faculty member (Dr.T.Rushi Naidu) in an area of 100 mtrs and watered. The need to maintain and water the plants have been explained to all individuals and made it a responsibility of everyone participated in the plantation drive. A total of 30 saplings have been planted in this phase.

Various plants that are planted in this phase include:

S.No	Name of the Plant	Common Name
1	Reba	Candyleaf
2	Clay Green Ficus	Ficus Tree
3	Aracuria Heterophylla	Norfolk Island Pine
4	Ficus Black	Weeping Fig

5. EVIDENCE OF SUCCESS:

Quantifiable Growth:

Documented data showcasing the number of trees planted during the program. This data could include specific species, locations, and the overall increase in green cover on AIPS premises.

Tree Survival Rates:

Regular monitoring reports indicating the survival rates of the planted trees. High survival rates would be indicative of effective care and maintenance strategies implemented post-plantation.

Environmental Impact:

Air and water quality assessments before and after the tree plantation, had showed positive influence on local environmental conditions.

6. CONCLUSION:

The Green belt plantation drive at AIPS stands as a resounding success, demonstrating the institution's commitment to environmental stewardship and community well-being. The evidence of success is multifaceted, encompassing both quantitative metrics and qualitative observations that underscore the positive impact of the initiative.

Quantifiable measures, including the number of trees planted, survival rates, and environmental assessments, showcase the tangible growth and environmental improvements brought about by the

program. The active participation of the AIPS community, documented through attendance records and community engagement, underscores the success of the initiative in fostering a sense of collective responsibility for the environment.

Faculty and NSS Volunteers associated with plantation program to nurture a sense of environmental responsibility

Greenbelt plantation drive conducted by 4th Pharm.D students as a part of NSS Committee on World environment day eve within the college premises

Faculty and students initiating green belt plantation at the college campus fostering nature's importance

Certification & Inspection

Certificate of Registration

This is to certify that the

Requirements for performing inspection

of

ENVIRO KAMKAR LLP

at

6-20-24/60, EAST POINT COLONY, VISAKHAPATNAM- 530 017 – ANDHRA PRADESH, INDIA

has been independently assessed and is compliant with the requirements of:

ISO/IEC 17020:2012

For the following scope of activities:

Environmental Audits, Energy Audits, Green Audits and Environmental Compliance Assessment.

Certificate Number: UQ - 2022082258

Validity of this certificate can be verified at www.ukcertifications.org.uk/verify

Date of Initial Registration	23rd August 2022
Date of this Certificate	21st August 2023
2nd Surveillance Audit Due	22nd August 2024
Certificate Expiry	22nd August 2025

Authorised Signatory

UKAF

UK Certification & Inspection Ltd.

GREEN AUDIT ASSESSMENT & RANKING CRITERION

#	Audit Components	WA	Rec. Score					Max. Score
			A	B	C	D	TOT	
1	Policy and Program development	10	3	2.5	2.5	2	10	10
2	Land use and Land Cover Mgmt.	15	3	2	2	3	10	15
3	Water Management	15	2	3	3	2	10	15
4	Energy Management	15	2	3	3	2	10	15
5	Wastes Management	15	2	3	3	2	10	15
6	Green Initiatives	10	2	3	3	2	10	10
7	Participation Levels	10	2.5	2.5	2.5	2.5	10	10
8	BMPs & Green Skills Development	10	2	2.5	2.5	3	10	10
summary		@	18.5	21.5	21.5	18.5	80	**100**

A. Approved Plans for desired out comes: (18.5)
B. Book Keeping: (21.5)
C. Periodical Monitoring (21.5)
D. Out Put levels (18.5)

Category	% Range
AA	➢ **90**
A++	**80 – 89**
A+	**70 – 79**
A	**60 – 69**
B+	**50 - 59**
B	**40 - 49**
C	**< 40**

2020-2021

ENVIRONMENTAL AUDIT REPORT

CONTENTS

PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

Certificate of Environment Audit

It is hereby Certified that
the Green Initiatives of
Avanthi Institute of Pharmaceutical sciences
were audited based on
the audit evidences collected and validated by the
Core Audit Team under the supervision of
ENVIRO KAMKAR LLP
as the External Green Auditors
and it is recommended that

ENVIRONMENT AUDIT GRADE "B++"

Be awarded to

For the year 2020 – 2021

On this Day, the November 5th 2021 at Visakhapatnam.

Certificate No. EAEKL202104

ENVIRO KAMKAR LLP VISAKHAPATNAM

(Ms. K. S. Aparna)
Chief Auditor
Enviro Kamkar LLP

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES AVANTHI EDUCATIONAL SOCIETY HYDERABAD VIZIANAGARAM

PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

GREEN & ENVIRONMENT AUDIT TEAM 2020-2021

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

ENVIRO KAMKAR LLP

Audit Team:

K. Srinija Aparna

K. S. Srinivas Karthik

Y.V. Raghu Ram

as External Auditors

&

Dr. T. Rushi Naidu, Asst. P rofessor, (Department of Pharmacy practice)

Dr.N. R.C Randeep , Asst. Professor,(Department of Pharmacy practice)

Ms. A. Rohitha (Student Member,B.Pharm)

Ms. C .H. Gowthami (Student Member,Pharm.D)

As In house Team

List of Abbreviations

1	AIPS	Avanthi Institute of Pharmaceutical Sciences
2	EKL	Enviro Kamkar LLP
3	AICTE	All India Council for Technical Education
4	ISO	International Standards Organization
5	Kg	Kilo Grams
6	Kl	Kilolitres
7	Kvaph	Kilo volts amps per hour
8	KLD	Kilo litres Day
9	CO_3	Carbonates
10	CO_2	Carbon Dioxide
11	MoE	Ministry of Education
12	GOI	Government of India
13	E Waste	Electrical and Electronic Waste
14	UGC	University Grants Commission
15	UKcert	UK Certification and Inspection
16	B.Pharm	Bachelor of Pharmacy
17	NBA	National Board of Accreditation
18	Pharm.D	Doctor of Pharmacy
19	M.Pharm	Masters of Pharmacy
20	JNTUK	Jawaharlal Nehru Technological University Kakinada

PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
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1. PREAMBLE:

Avanthi Institute of Pharmaceutical Sciences (AIPS) is a member institution of the Avanthi Educational Society Founded in 1991, by an idealistic contributor; Sri M. Srinivasa Rao, who laid the foundation for AVNP in 2005, for providing quality education, AIPS has been shaping the future generation of pharmacy for over 13 years. The campus was established at a semi urban village, **Cherukupalli**(V) Bhogapuram(M) of Vizianagaram district, Andhra Pradesh.

AIPS has always been an Innovator in contributing the national goals and missions related to Environment and Climate change by spreading them to its students, employees, and neighbors. One such chief participating activity is "***Green*** and ***Environment Friendly Campus***." The program follows the standards envisioned by the All- India Council for Technical Education (***AICTE***), *National Assessment and Accreditation Council* (***NAAC***) and the policies of the university.

AIPS, as part of its management policies, to riving the impacts of its activities under the Green and Environment-Friendly Campus program, commenced Green and Environmental Audits from the academic year 2020-2021. The Environmental Audit was entrusted to a third-party professional, Enviro Kamkar LLP (EKL), a startup company, groomed by IIM (B) & NSRCEL and has good experience in Green Audit.

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PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

This report deals with the first-ever annual Environment Audit of AIET and developed the audit framework for the institution, and related mechanisms, considering the goals of NEP, AICTE, and NAAC, besides the norms of the affiliating university, Jawaharlal Nehru Technological University, Kakinada.

2. ABOUT THE INSTITUTION:

Avanthi Institute of Pharmaceutical Sciences, over the past 13 years, has been providing eminence education in pharmacy. The institute was affiliated with **Jawaharlal Nehru Technological University, Kakinada** was approved by All India Council for Technical Education (AICTE).

The **Location** of the AIPS is situated (17° 17" 94° 33' 44" N latitudes and 83° 42' 21- "95" 6" E longitudes), between Visakhapatnam and Vizianagaram cities, on the National highway NH 16 and urban or semi-urban environment. In its 4 hectares of campus, offers graduate and post-graduate program in Pharmacy department.

The **Population** of the AIPS mainly comprises of Students. Teaching Staff, Non-teaching staff and other Associates (suppliers, contractors, etc.) and during the academic year 2020-2021, the Institution's population was at 657, of which students account for 88.54%,8.37% for Teaching Staff, Now-teaching staff and other Associates account for 3.04%.

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Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

AIPS Career Guidance Centre (CGC) supports the students with information and guidance in depriving the right opportunities, while the institution's Training and Placement Centre(TPC) made the students for both on-campus and off-campus placement activities. AIPS identifies talented students with innovative ideas, creativity and encouraging them.

Avanthi Institute of Pharmaceutical Sciences has conducted numerous environmental programs as part of its regular welfare programs and NSS (National Service Scheme) initiatives. However, due to the exceptional circumstances of the ongoing academic year (2020-2021) and the resulting lockdown, most institutional activities have been shifted to online platforms. Consequently, only a limited number of environmental activities were carried out during this period.

3. SCOPE OF ENVIRONMENTAL AUDIT:

The environmental policies and guidelines shall determine the framework for the Environmental Audit. AICTE directions related to curricular and non-curricular activities related to the Environment: and the general laws related to the environment are considered in the Environmental Audit for the Academic Year

PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

2020-2021 of AIPS. It consists of review of AIPS performance in the management of natural resources.

The Green Audit primarily covers the status of most environmental components, while the Environmental Audit focuses on monitoring state indicators and assessing performance. The present audit aims to evaluate and comprehend the implementation status and impacts on the environmental components.

4. METHODS ADOPTED:

The Environmental Audit was planned in three stages:

- Pre-Audit Stage
- Audit Stage
- Post Audit Stage, following the guidelines outlined in the Green Audit.

1. Pre-Audit Stage: During this stage, the management shall appoint a third party environmental auditor and constitute the team of internal auditors; the audit team shall finalize the audit scope and methodology; and list out the audit evidences to be collected to establish the findings.

2. Audit Stage: This is a long stage that begins with the orders of the management to all unit heads, employees, students, and others, directing them to enable accessing of information by the audit team; interaction with all the unit heads and validating the list of audit evidences to be collected; followed by collecting and validating the audit evidences from time to time, and finally the team prepares the Audit report for sharing with all the unit heads for review and final submission of the Audit report of Environmental Audit 2021: Avanthi Institute of Pharmaceutical Sciences will be completed.

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Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

3. Post-Audit Stage: This stage begins with a thorough discussion of the Audit recommendations by the Management and other administrators and plans for implementation where necessary. The internal members of the Audit team nominated as in stage 1 shall monitor the implementation plan and appraise the progress to the management.

The College Management, through the College Principal has authorized M/s Enviro Kamkar LLP (EKL), Visakhapatnam to conduct the Green and Environmental Audits for the college for the year 2020-21, and issued orders on 20-09-2021. On the same day, the principal notified the audit activity of all the academic, administrative and other supporting departments/units for active participation in enabling the audit team for assessments.

The internal audit team was constituted of the following members of the AIPS.

Principal	Dr.M.B.V.Raju
Vice principal	Dr.Uma Shankar
Faculty members	Dr.B.Manoj kumar-H.O.D Mrs.B.Chaitanya Assistant professor Dr.T.Rushi Naidu-Assistant professor
Student members	Rakesh-Pharm.D Syam kumar-Pharm.D Naveen-B.Pharm

This Audit covers the period from June 2020 to May 2021, the general academic year, and the Final Audit process was initiated with the collaboration of all the unit heads of the academic, and non-academic departments of the Institute, students and others associated with the college.

PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

5. ENVIRONMENTAL AUDIT:

AIPS, being one of the lead pharmaceutical educational institutes of the north Andhra Districts, is committed to the cause of environment and sustainable development, As part of its green practices, "GREEN AUDIT" which shall be a base documented and tracing the Environmental Indices.

Therefore, the environmental audit was limited to AIPS Environmental policy and AICTE recommended components for the students and institutions of technical education, to enable the building of the nation and ensure sustainable development. As an educational institution, AIPS has an obligation to comply with the laws of the land, **particularly with reference to Rules related to different wastes generated, resource conservation,** and contributing to the relevant sustainable development goals (SDG). Thus, taking all these into consideration,The EA was presented under four sections as given below:

STATE OF ENVIRONMENTAL INDICATORS:

The present one is the 1st ever Environment Audit, for this institute, we have recorded the current resource parameters of this year and made an indicator consumption info. The following are the recorded indicators with our observation.

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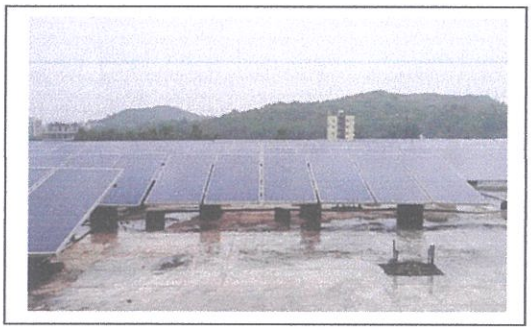
PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

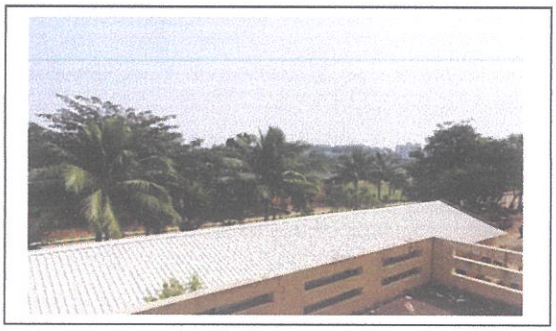
Table1: State of Environmental Indicators for the Academic Year 2020-2021

S.no	Indicator	2020-2021
	LAND USE	
1	Total Geographical Extent of the Land	10117.1
2	Green Area	5016
3	Built up Area	6593.88
4	Per capital built-up Area	1.01
	BIO DIVERSITY	
5.	No. plant species (natural)	10
6.	No. of Tree species	08
7.	Tree biomass stock	12t
	WATER	
8.	Total water consumption	12kkl
9.	Per capital water consumption	12.4 liters/day/head
10.	Waste water RRR	3kkl
	ENERGY	
11.	Total energy consumption	561289 KW/annum
12.	Per capital energy consumption	23.21 KW/annum/head
13.	Solar % in the total consumption	76%
14.	Direct consumption of coal	0
15.	Direct consumption of oil	13352 liters/annum
16.	Direct consumption of LPG	6.5kg/annum
	WASTE MANAGEMENT	
17.	Wet waste generated	1 kg/day
18.	Dry waste generated	1.5 kg/day
19.	Plastic waste generated	0.10 kg/day
	CARBON FOOT PRINT	
20.	Total C emissions/annum	85 t CO2 e
21.	C emissions offset through Solar/annum	48t COie
22.	Net emissions/ annum	90 t CO2e

PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

These indicators are measured based on the audit evidences gathered as disclosures from the AIPS, these indicators do not reflect the true consumption of the resources and energy because of the fact that most part of the year, the institution has functioned virtually due to the pandemic conditions. However, these indicators' status for this year can act as the baseline information for assess the status of the next year and enables us to assess the impacts of the policies and management practices on the environment.





STATUS OF ENVIRONMENTAL COMPLIANCE:

AIPS, being a highly responsible institution, it is proactive in complying with the statutory and social obligations. Therefore, the current indicators of environmental compliance for this academic year (2020 – 2021) are presented in Table2below.

PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

Table2: State of compliance of different environmental Norms:

No.	Compliance Head	Rank	*Ranking*
1	Maintaining Height of DG Set Stacks	*****	
2	GWB permissions	*****	*=Aspirant
3	PUC certificate for vehicles	*****	
4	E-waste Rules	***	**=Improving
5	Green Building Norms	***	***=Moderate
6	Use of Renewable energy	*****	****=Good
7	Solid Waste management Rules	***	
8	Plastic Waste Management Rules	***	*****=BEST
9	Energy Efficiency	**	

The above indicators of compliance reveal that the overall environmental compliance performance of the AIPS is in its accelerating phase. With the exception of developing infra for(a)monitoring the wastes management and achieve Energy Efficiency, all other indicators are very positive. The institute's management has developed plans to achievement percent compliance within three years and also to achieve the goal of Carbon neutral by the year 2025-2026.

CURRICULAR INCLUSIONS:

The incorporation of environmental, ecological, and sustainable development aspects into the curriculum is crucial for technical education, particularly in enabling young engineers to assess the impacts of technologies on nature and ecology. AIPS has prioritized this aspect and has implemented the following initiatives under this component:

PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

A. ***Environmental Awareness Program:*** Every year, AIPS organizes an Environmental Awareness Program as part of the **induction** process for newly admitted students. This program aims to familiarize them with Nations environmental policy, engage them in environmental activities, raise awareness about environmental responsibilities, and highlight the importance of sustainable development. In this audit year, online program was conducted for students, where they had the opportunity to discuss various environmental aspects based on their interests.

B. ***Mandatory Course on Environmental Science:*** AIPS has implemented a mandatory course on Environmental Science for all undergraduate students. It is a prerequisite for students to successfully complete this course as per the university norms. The syllabus of this course aligns with the national syllabus recommended for graduate engineers adopted by the JNTUK to which the college is affiliated. The syllabus covers a wide range of subjects from ecological processes to the evaluation of environmental impacts. Students are provided with comprehensive knowledge in these areas. Additionally, the course includes a compulsory field study component, providing practical exposure to real-world environmental scenarios.

C. ***Mandatory Courses on(1)"Indian Constitution" and(2)"Essence of Indian Traditional Knowledge":*** In accordance with the guidelines set by JNTUK, AIPS has made it compulsory for all B.pharm, pharm.D, M.Pharm courses to Include a course on *1)Indian Constitution and(2)Essence of Indian Traditional Knowledge.* These courses aim to provide students with the necessary knowledge and understanding the constitutional obligations and valuing.

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES * AVANTHI EDUCATIONAL SOCIETY * HYDERABAD * VIZIANAGARAM *

PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

ENVIRONMENTAL ACTIVITIES:

Most of the environmental activities conducted during the reporting were organized in interactions with the Environmental experts; Quiz and Brochure making competitions and Plantation activities.

Student Webinars:

The academic year being an unusual one, in which most part of the year the students had their learning on virtual mode. This enabled to conduct frequent student webinars on different environmental themes and was organized in such a way that every month, one department students would present on a relevant and the students of the remaining departments would participate.

Interactions with Environmental Experts:

On the days of Environment significance, the students at the Institution level (all departments), and the faculty, have participated in the Interaction programs, where in a renowned subject expert was invited and motivated the students and the staff on a specific theme. These programs were conducted in both Virtual and Physical modes on the following Environmental days of significance.

1. **Competitions:**

   On June 5th of 2021, the World Environment Day, a art competition on the Environment and Climate Change were conducted, and the teams from different departments have participated.

PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

2. Tree plantation activities:

Following the COVID norms of the government, the faculty and other staff of the AIPS have celebrated Vana Mahotsava by planting 60 tree saplings in the AIPS campus, during the 1rd week of July, 2020.

PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

6. ENVIRONMENTAL AUDIT RECOMMENDATIONS:

Based on the results of the Environmental Audit, the Audit Team recommends the following for implementation and to realize desired impacts of the AIPS environmental activities:

1) As required under the new rules of the AICTE, the Institution must,develop and adopt an 'Environmental Policy' for the institution;

2) The reported environmental indicators for the reporting period were derived solely from the data collected during a time when the institution operated predominantly in a non-physical (virtual) mode for a significant portion of the year. As a result, these indicators may not accurately reflect the typical performance of a normal year. However, these indicators need to be considered as the performance indicators for monitoring every year to understand the performance of the activities and review the management decisions.

3) The institution has vast scope for increasing the diversity of the species and to enhance the C sequestration in the campus.

4) The AIPS shall plan to replace the power consuming gadgets which are not energy efficient and overall, around 40% of such gadgets are existing, which are mostly air conditioners and other electrical appliances.

PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

5) The scope for improving the waste management facilities is high and the Institution has already made some plans for the same.

Signature of the Faculty

1.
2.

PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

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HYDERABAD
VIZIANAGARAM

GOVERNMENT OF INDIA

MINISTRY OF CORPORATE AFFAIRS

Central Registration Centre

Form 16

[Refer Rule 11(3) of the Limited Liability Partnership Rules, 2009]

CERTIFICATION OF INCORPORATION

LLP Identification Number: **AAN-5693**

It is hereby certified that ENVIRO KAMKAR LLP is incorporated pursuant to section 12(1) of the Limited Liability Partnership Act, 2008.

Given under my hand at Manesar this Twenty sixth day of November Two thousand eighteen.

DS MINISTRY OF CORPORATE AFFAIRS 24

SATYA PARKASH KUMAR

For and on behalf of the Jurisdictional Registrar of Companies

Registrar of Companies

Central Registration Centre

Disclaimer: This certificate only evidences incorporation of the LLP on the basis of documents and declarations of the applicant(s). This certificate is neither a license nor permission to conduct business or solicit deposits or funds from public. Permission of sector regulator is necessary wherever required. Registration status and other details of the LLP can be verified on www.mca.gov.in

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Mailing Address as per record available in Registrar Office:

ENVIRO KAMKAR LLP

Flat No - 402,6-20-24/60, East Point Colony,,Opp. Andhra Bank,,Visakhapatnam,Vishakhapatnam,Andhra Pradesh,530017,India

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ESTD : 2006

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

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Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.
www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Cherukupally
Date: 06-09-2019

CIRCULAR

This is to inform that Avanthi Institute of pharmaceutical Sciences is conducting Green Audit and Environmental Audit for the current academic year. In this connection, all the Branches of Pharmacy are requested to attend the same and actively participate in the program.

Organizers

- M.B.V.Raju (Principal –AIPS)
- V.Uma Shankar (Vice Principal)
- Faculty Members –
  1. Dr. B.Neelima (HOD)
  2. Mrs. B.Aruna(Assistant Professor)
- Student Members – B.Padmini Pharm-D
  P.Mounica Pharm-D
  B.Navya B-Pharm

PRINCIPAL

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Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

Circulated to:
1. All HOD's
2. Administrative office

2019-2020

ENVIRONMENTAL AUDIT REPORT

CONTENTS

PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
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1. Preamble:

Avanthi Institute of Pharmaceutical Sciences (AIPS) is a member institution of the Avanthi Educational Society Founded in 1991, by an idealistic contributor; Sri M. Srinivasa Rao, who laid the foundation for AVNP in 2005. For providing quality education, AIPS has been shaping the future generation of pharmacy for over 13 years. The campus was established at a semi urban village, Cherukupalli(V) Bhogapuram(M) of Vizianagaram district, Andhra Pradesh.

AIPS has always been an innovator in contributing the national goals and missions related to Environment and Climate change by spreading them to its students, employees, and neighbors. One such chief participating activity is "Green and Environment Friendly Campus." The program follows the standards envisioned by the All- India Council for Technical Education (AICTE), National Assessment and Accreditation Council (NAAC) and the policies of the university.

AIPS, as part of its management policies, to riving the impacts of its activities under the Green and Environment-Friendly Campus program, commenced Green and Environmental Audits from the academic year 2019-2020.

2. About the institution:

Avanthi Institute of Pharmaceutical Sciences, over the past 14 years, has been providing eminence education in pharmacy. The institute was affiliated with Jawaharlal Nehru Technological University, Kakinada was approved by All India Council for Technical Education (AICTE). The Location of the AIPS is situated (17° 17" 94° 33' 44" N latitudes and 83° 42' 21-"95" 6" E longitudes), between Visakhapatnam and Vizianagaram cities, on the National highway NH 16 and urban or semi-urban environment. In its 3 acres of campus, offers graduate and post-graduate program in Pharmacy department.

The Population of the AIPS mainly comprises of Students. Teaching Staff, Non-teaching staff and other Associates (suppliers, contractors, etc.) and during the academic year 2019-2020, the Institution's population was at 601, of which students account for ,89.56% ,7.4%for Teaching Staff, Non-teaching staff and other Associates account for 2.9%.

AIPS Career Guidance Centre (CGC) supports the students with information and guidance in depriving the right opportunities, while the institution's Training and Placement Centre(TPC) made the students for both on-campus and off-campus placement activities. AIPS identifies talented students with innovative ideas, creativity and encouraging them.

PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

3. Scope of Environmental Audit:

The environmental policies and guidelines shall determine the framework for the Environmental Audit. AICTE directions related to curricular and non-curricular activities related to the Environment: and the general laws related to the environment are considered in the Environmental Audit for the Academic Year 2019-20 of AIPS. It consists of review of AIPS performance in the management of natural resources.

4. Methods adopted:

The Environmental Audit was planned in three stages:

- Pre-Audit Stage
- Audit Stage
- Post Audit Stage, following the guidelines outlined in the Green Audit.

The internal audit team was constituted of the following members of the AIPS.

Principal	Dr.M.B.V.Raju
Vice principal	Dr.V.Uma Shankar
Faculty members	Dr.B.Neelima-H.O.D Mrs.B.Aruna-Assistant professor
Student members	B.Padmini Pharm-D P.Mounica Pharm-D B.Navya B-Pharm

5. Environmental Audit:

AIPS, being one of the lead pharmaceutical educational institutes of the north Andhra Districts, is committed to the cause of environment and sustainable development, As part of its green practices, "GREEN AUDIT" which shall be a base documented and tracing the Environmental Indices.

Therefore, the environmental audit was limited to AIPS Environmental policy and AICTE

Recommended components for the students and institutions of technical education, to enable the building of the nation and ensure sustainable development.

PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

As an educational institution, AIPS has an obligation to comply with the laws of the land, **particularly with reference to Rules related to different wastes generated, resource conservation,** and contributing to the relevant sustainable development goals (SDG). Thus, taking all these into consideration, the EA was presented under four sections as given below:

6. State of Environmental Indicators:

The present one is the 1st ever Environment Audit, for this institute, we have recorded the current resource parameters of this year and made an indicator consumption info. The following are the recorded indicators with our observation.

Table: State of Environmental Indicators For the Academic Year 2019-2020

S.NO	INDICATOR	2019-2020
	LAND USE	
1.	Total Geographical Extent of the Land	10117.1
2.	Green Area	5016
3.	Built up Area	6593.88
4.	Per capital built-up Area	1.01
	BIO DIVERSITY	
5.	No. plant species (natural)	10
6.	No. of Tree species	08
7.	Tree biomass stock	12t
	WATER	
8.	Total water consumption	12kkl
9.	Per capital water consumption	12.4 liters/day/head
10.	Waste water RRR	3kkl
	ENERGY	
11.	Total energy consumption	561289 KW/annum
12.	Per capital energy consumption	23.21 KW/annum/head
13.	Solar % in the total consumption	96%
14.	Direct consumption of coal	0
15.	Direct consumption of oil	13352 liters/annum
16.	Direct consumption of LPG	6.5kg/annum
	WASTE MANAGEMENT	
17.	Wet waste generated	1 kg/day
18.	Dry waste generated	1.5 kg/day
19.	Plastic waste generated	0.10 kg/day
	CARBON FOOT PRINT	
20.	Total C emissions/annum	85 t CO2 e
21.	C emissions offset through Solar/annum	48t COie
22.	Net emissions/ annum	90 t CO2e

These indicators are measured based on the audit evidences gathered as disclosures from the AIPS, these indicators do not reflect the true consumption of the resources and energy because of the fact that most part of the year, the institution has functioned virtually due to the pandemic conditions. However, these indicators' status for this year can act as the baseline information for assess the status of the next year and enables us to assess the impacts of the policies and management practices on the environment.

PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

7. Curricular Inclusions:

The incorporation of environmental, ecological and sustainable development aspects into the curriculum is crucial for technical education, particularly in enabling young engineers to assess the impacts of technologies on nature and ecology. AIPS has prioritized this aspect and implemented the following initiatives under this component:

PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

1. **Environmental Awareness Program:**

Every year as part of the orientation process for newly enrolled students, AIPS runs an environmental awareness program. Their participation in environmental activities, educational duties, education on environmental duties, and emphasis on the significance of sustainable development are all goals of this program, which also solves the chance to debate many environmental concerns based on their interests during this audit.

2. **Environmental Science:**

All undergraduate students must now take environmental science course as required by AIPS. According to university requirements, it is a requirement for students to successfully complete this course. The curriculum covers a wide range of topics, from the analysis of environmental impacts to biological processes. Comprehensive information in these areas is given to the students. A required field study component of the course also offers hands-on exposure to actual environment scenarios.

8. Environmental Activities:

Most of the environmental activities conducted during the reporting were organized in interactions with the Environmental experts; Quiz and Brochure making competitions and Plantation activities.

1. Ban on single use plastic:

Single-use plastic items are those that are designed to be used once and then discarded. They are made from non-biodegradable materials, such as water bottles, polythene covers which can take hundreds or even thousands of years to decompose. Single use plastic items are a major source of pollution, particularly in oceans and waterways. They can also harm wildlife, which can mistake them for food or become entangled in them.

Reduction in Plastic Waste: Measure the decrease in the amount of plastic waste generated on campus through waste audits or waste collection data.

Cleaner Campus: Observe and document the cleanliness of the campus, indicating a reduction in plastic litter.

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Cherukupally (V), Bhogapuram Mandal
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Informational Signage boards regarding "Stop Plastic Pollution" at AIPS campus to protect wildlife and environment from pollution

PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

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Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

2. Campus cleanup drive:

Campus cleanup drive helps in the clean surroundings and great impact on the environment. This rule has been taken for creating healthy environment, which helps to prevent water and soil pollution. This create great impact on the college environment, such as clean grounds, clean pedestrian pathways. This also helps in friendly commutation between staff and students which helps in making easy to shareideas and thoughts between them

Campus clean up drive by AIPS students: Collection of bio-degradable waste to maintain utmost cleanliness and hygiene in campus

Campus clean up drive by AIPS students: Disposal of bio-degradable waste into trash bins to promote clean and hygienic campus ambience

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Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

3. Student Webinars:

The academic year being an unusual one, in which most part of the year the students had their learning on virtual mode. This enabled to conduct frequent student webinars on different environmental themes and were organized in such a way that every month, one department students would present on a relevant and the students of the remaining departments would participate.

4. Interactions with Environmental Experts:

On the days of Environment significance, the students at the Institution level (all departments), and the faculty, have participated in the Interaction programs, where in a renowned subject expert was invited and motivated the students and the staff on a specific theme. These programs were conducted in both Virtual and Physical modes on the following Environmental days of significance.

Signature of the Faculty

1. N. Neelima
2. B. Aruna

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PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTUK-Kakinada)
Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.
www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Cherukupally
Date: 12-09-2018

CIRCULAR

This is to inform that Avanthi Institute of pharmaceutical sciences is conducting Green Audit and Environmental Audit for the current academic year. In this connection, all Branches of Pharmacy to attend the same and effectively take part within the program.

Organizers

- M.B.V.Raju (Principal –AIPS)
- V.Uma Shankar (Vice Principal)
- Faculty Members –
    1. Dr. N. Hema Durga (HOD)
    2. Mrs. Vijaya lakshmi (Assistant Professor)
- Student Members –G.Emaneul Pharm.D
  B.Anusha Pharm.D
  P.Srinivas-B.Pharm

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Vizianagaram Dt., - 531162

Circulated to:
1. All HOD's
2. Administrative office

2018-2019

ENVIRONMENTAL AUDIT REPORT

CONTENTS

PRINCIPAL
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Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

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PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
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AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES AVANTHI EDUCATIONAL SOCIETY HYDERABAD VIZIANAGARAM

PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

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PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

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PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

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8. Environmental Activities:

Most of the environmental activities conducted during the reporting were organized in interactions with the Environmental experts; Quiz and Brochure making competitions and Plantation activities.

1. Campus garden initiation:

Campus gardens are known for their potential to reduce stress and promote well- being. They provide a tranquil retreat for students and staff, fostering mental and emotional rejuvenation. Such green spaces encourage relaxation and introspection, which can be especially beneficial in an academic environment. The campus garden initiative implemented in our campus has yielded tangible evidence of success by increasing plant number. Notably, there has been a significant surge in student and faculty engagement, evident from the increased participation in garden maintenance and expansion activities.

PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

Campus Garden Initiation by AIPS: Expanding the campus greenery and promoting a greener atmosphere.

Campus Garden Initiation by AIPS: Expanding the campus greenery and promoting a sustainable atmosphere.

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PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

2. Waste reduction and recycling:

Waste reduction and recycling initiatives play a pivotal role in addressing the environmental impact of waste generation, promoting responsible resource management, and fostering a culture of sustainability among students, faculty, and staff. Success in waste reduction and recycling on a campus is quantifiable through a range of evidence-based measures. The most direct indicators include increased recycling rates and higher waste diversion rates, demonstrating a reduced reliance on landfills.

Waste reduction and recycling by AIPS as a part of Green campus initiation: To minimize landfill contributions and promote eco-friendly habitat

PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

3.

Recyclable materials transportation to recycling facilities after collection in landfills to encourage senvironmentally conscious habits.

3. Student Webinars:

The academic year being an unusual one, in which most part of the year the students had their learning on virtual mode. These enabled to conduct frequent student webinars on different environmental themes and were organized in such a way that every month, one department students would present on a relevant and the students of the remaining departments would participate.

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES * AVANTHI EDUCATIONAL SOCIETY * HYDERABAD * VIZIANAGARAM *

PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

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1. Hema
2. Smd.

PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES
AVANTHI EDUCATIONAL SOCIETY
HYDERABAD
VIZIANAGARAM