GREEN AUDIT REPORT

VELLORE INSTITUTE OF TECHNOLOGY (VIT)

Katpadi, Vellore - 632014, Tamil Nadu, India

Audit Date: 12th August 2024

Audit Period: September 2023 to August 2024

Report Prepared by

ECO SERVICES	**Eco Services India Pvt. Ltd.** No. 1/134, Dhanakotiraja Street, Sundar Nagar Ekkaduthangal, Guindy, Chennai – 600032 Tel: +91-44-30683067/43102232	NABET Accredited	TC - 5664	TÜV SÜD ISO 9001

ECO SERVICES

11th November, 2024

Certificate

This is to certify that we have conducted an Green Audit for **Vellore Institute of Technology (VIT),** Vellore Campus located S. F. No. 600/1A, 600/1B, 600/2, 601/1A, 608/1, 608/2, 608/3, 609/2A,etc. of Katpadi Village, S. F. No. 9/1, 9/2, 10/1, etc. of Kangeyanallur Village and S.F. No. 351/1, 352/2, 353/1A, etc. of Brammapuram Village, Katpadi Taluk and Vellore District

The audit broadly covered the following components in the campus,

- Environmental Management Practices of the Institution
- Initiatives of the Institution towards Sustainable Development Goals

The activities and management of various components mentioned above have been verified and found satisfactory. The efforts taken by the management, faculty and students towards Sustainability are highly appreciated and commendable.

for **Eco Services India Pvt. Ltd.,**

ECO SERVICES INDIA PVT. LTD. No.1/134, Dhanakotiraja Street, Sundar Nagar, Ekkaduthangal, GUINDY CHENNAI

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NABET Accredited EIA Coordinator

(NABET/QCI Accreditation No. NABET/EIA/24-27/RA 0332)

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CHAPTER 1
INTRODUCTION

1.1 OVERVIEW OF THE INSTITUTION

Vellore Institute of Technology (VIT) established under Section 3 of the University Grants Commission (UGC) Act, 1956, and was founded in 1984 as a self-financing institution called the Vellore Engineering College. The Union Ministry of Human Resources Development conferred University status on Vellore Engineering College in 2001. The campus has a cosmopolitan atmosphere, attracting students from across the globe and has blossomed into a multi-disciplinary Institute offering more than 148 UG & PG programs, besides Doctoral programs, through 17 Schools and 45 Departments. Programs have the approval of the relevant Statutory Regulating Agencies such as UGC, AICTE, PCI, BCI, NCTE, DGS etc. VIT has been accredited by NAAC with a (A++) grade in the last three consecutive cycles.

VIT has achieved notable rankings across various global and national platforms. In the NIRF rankings, it holds the following positions: 10th for Overall University, 11th for Engineering, 13th for Research, and 19th for the overall ranking. According to the 2022 Shanghai (ARWU) World University Rankings, VIT is ranked among the top 5-6 universities in India. In the QS World University Rankings for Engineering and Technology, VIT is placed within the 300-400 range globally and 9th in India. The university has also earned significant recognition in other rankings, including 11th place in India according to the UNIRANKS Impact Ranking among the top 2% of scientists worldwide, 12th in India according to the Round University Ranking and 9th in India according to the University Ranking by Academic Performance (URAP), Turkey.

Figure 1.1 Notable University Rankings across Various Global and National Platforms.

These accolades reflect VIT's growing global presence and academic excellence.

1.2 VISION AND MISSION OF THE INSTITUTION

Vision:

- ✓ Transforming life through excellence in education and research.

Mission:

- ✓ **World class Education:** Excellence in education, grounded in ethics and critical thinking, for improvement of life.
- ✓ **Cutting edge Research:** An innovation ecosystem to extend knowledge and solve critical problems.
- ✓ **Impactful People:** Happy, accountable, caring and effective workforce and students.
- ✓ **Rewarding Co-creations:** Active collaboration with National & International industries, universities for productivity and economic development.
- ✓ **Service to Society:** Service to the region and world through knowledge and compassion

1.3 TRUE GREEN FRAMEWORK OF THE INSTITUTION

The institution is committed to create a green environment to protect the planet for future generations. Through sustainable initiatives, VIT emphasizes the careful conservation and responsible use of water, soil, air, and other natural resources within its campus and the broader community. To assess these efforts, a Green Audit is conducted each academic year. Accordingly, VIT's Vellore Campus engaged Eco Services India Private

Limited to evaluate, audit, and report on potential waste management measures and green campus initiatives.

1.3.1 True Green Goals of the Institution

The true green goals of the institution are as follows:

- ✓ Be a Socially responsible Institution in promotion of waste management among communities in and around Vellore towards Refuse, Reduce, Reuse, Repurpose, and Recycle of waste.
- ✓ Be a model in Green Practices and transfer technology in green practices for sustainable practices and Instill best practices among youth
- ✓ Awareness about waste management, reducing waste, segregation of waste , recycling, safeguard clean air, water and soil conservation for future generations.
- ✓ Promote alternative employment opportunities in Waste management – Plastic, Paper etc.,
- ✓ Enactment the cleanliness and hygiene campaign towards Zero waste generation.
- ✓ Bring out various models in recognizing clean water accessible for all individuals.
- ✓ Model centre in vermi-compost manure by the segregated waste in the campus for showcasing best recycling models
- ✓ Ensure community intervention in for understanding the importance of keeping the surroundings clean though various viable technologies
- ✓ Pilot affordable technologies, which help rural communities for transformation and promotion of sanitation and hygiene indicators.

1.4 GREEN AUDIT

A Green Audit is an assessment that evaluates an institution's environmental performance. It focuses on areas like energy use, water conservation, waste management, carbon emissions, and sustainable practices. By identifying strengths and areas for improvement, the audit helps the institution to adopt eco-friendly practices. It aligns institutional activities with global sustainability goals, often tracking progress toward reducing carbon footprints. The audit promotes accountability and enhances environmental awareness within the institution.

1.5 SCOPE AND OBJECTIVE OF GREEN AUDIT

Scope:

- ✓ Evaluation of energy conservation practices and efficiency measures.
- ✓ Analyze the effectiveness and management of current solid waste disposal, recycling, and reduction practices.
- ✓ Assess water conservation efforts, including usage patterns, infrastructure, and efficiency improvements.

- ✓ Review measures implemented for emission control, including strategies to reduce air and carbon emissions.
- ✓ Evaluate the management of green spaces, landscaping efforts, and biodiversity conservation initiatives.
- ✓ Verify compliance with environmental policies and alignment with the Sustainable Development Goals (SDGs).

Objective:

- ✓ To evaluate the institution's existing environmental practices, focusing on areas such as energy use, water conservation, and waste management.
- ✓ To identify opportunities for optimizing resource utilization, specifically energy and water, to minimize waste and reduce operational costs.
- ✓ To assess the effectiveness and implementation of sustainable practices within the institution.
- ✓ To increase environmental awareness among key stakeholders, including students, staff, and management, to foster a culture of sustainability.
- ✓ To verify the institutions compliance with applicable environmental laws and regulations to ensure adherence.
- ✓ To establish methods for monitoring environmental performance and tracking improvements over time

1.6 Methodology

The audit methodology is as follows:

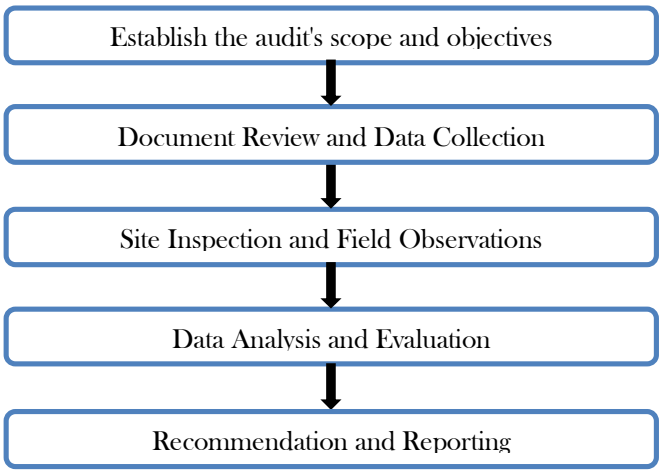

Figure 1.2: Audit Methodology

CHAPTER 2
ENVIRONMENTAL MANAGEMENT PRACTICES OF THE INSTITUTION

As part of its commitment to sustainability, the institution has implemented comprehensive environmental management practices aimed at reducing resource consumption and minimizing the environmental impact. The practices adopted by the institution on the key areas of environment are detailed below:

2.1 ENERGY

The total energy required for the day-to-day operation of the institution is sourced through TANGEDCO, Solar Panels and Water Heaters installed within the institution and through Wind energy sourced from Bharat Enterprises & BBK Shoes. The energy sources and power consumption details are provided in Table 2.1. The Power consumed through TANGEDCO for the Period September 2023 to August 2024 is listed in Table 2.2.

Table 2.1: Source of Energy and Consumption

Type of Energy	Power Consumed
Electricity from TANGEDCO	123174.8 Units
Solar Energy from Solar Panels and Solar Water heaters	4,20,000 Units/month
Wind Energy procured through Bharat Enterprises & BBK Shoes	1.22 Crore Units

Table 2.2: Power consumed through TANGEDCO for the Period September 2023 to August 2024

Month	Units Consumed	Month	Units Consumed
September 2023	39,84,000	March 2024	44,18,280
October 2023	40,15,200	April 2024	49,01,640
November 2023	31,70,400	May 2024	45,41,280
December 2023	22,39,320	June 2024	16,33,320
January 2024	32,80,440	July 2024	35,94,840
February 2024	38,55,480	August 2024	53,74,320

Energy Management Measures:

- ✓ The lighting fixtures in common areas of all the Blocks are replaced with Solar/LED.
- ✓ Washrooms/ restrooms in the academic buildings are equipped with occupancy sensor based appliance control for saving nearly 50 % of energy. The figure 2.1 shows the Photographs of the Solar Panels and Solar Water Heaters installed at roof top.

The figure 2.2 shows the Photographs of Solar and Wind Powered LED Street lights and LED lights provided in auditoriums. The figure 2.3 shows the Online Energy Monitoring of Solar Energy generated through Solar Panels

Figure 2.1 Photographs showing Solar Panels and Solar Water Heaters installed at rooftop

Figure 2.2 Photographs showing Solar and Wind Powered LED Street lights and LED lights provided in auditoriums

- ✓ The institution has replaced conventional desktop with Virtual Desktop Infrastructures. Advantage of VDI over traditional Desktop is its lower power consumption, (37Watts/Node) which sums up to an annual saving of around INR 1 million per annum. It has commissioned private cloud infrastructure and replaced 47 physical servers by an equal number of virtual servers. The power consumption has been reduced by 65%.
- ✓ As a step to future the institution is planning to build energy efficient Green Data Centre. The modular rack based cooling system can bring down the energy cost drastically (by about 38%).

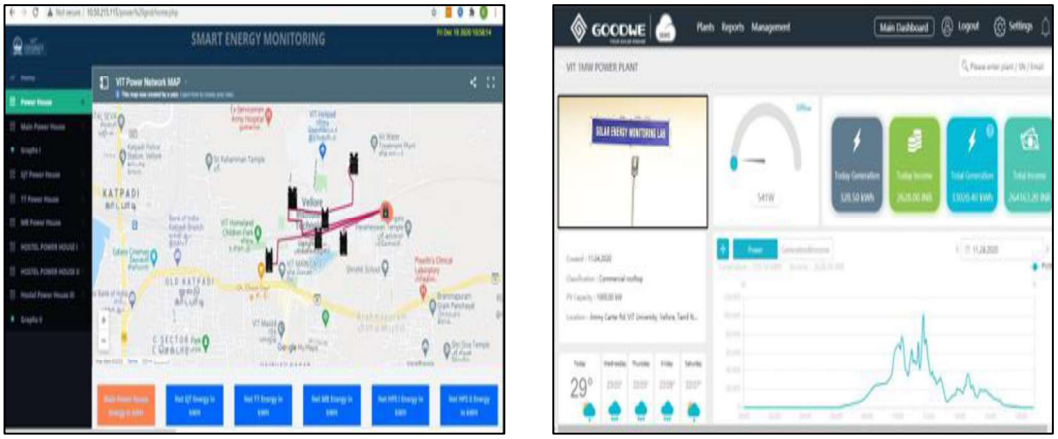

Figure 2.3 Photographs showing Online Energy Monitoring of Solar Energy generated through Solar Panels

- ✓ Innovation Cooling System is provided in Gandhi Block. To promote advancement in building thermal comfort, district energy system in accordance with India cooling action plan (ICAP) radiant cooling + indirect evaporative cooling - open classrooms and the corridors. The figure 2.4 shows the Photograph of Innovative Cooling System in Gandhi Block The figure 2.5 shows the Comparison graph of energy consumed based on different cooling systems

Figure 2.4: Photograph showing Innovative Cooling System in Gandhi Block

- ✓ The energy efficient pumps are installed to reduce the energy consumption. The Figure 2.5 shows the photograph of the energy saving machines installed in the institution.

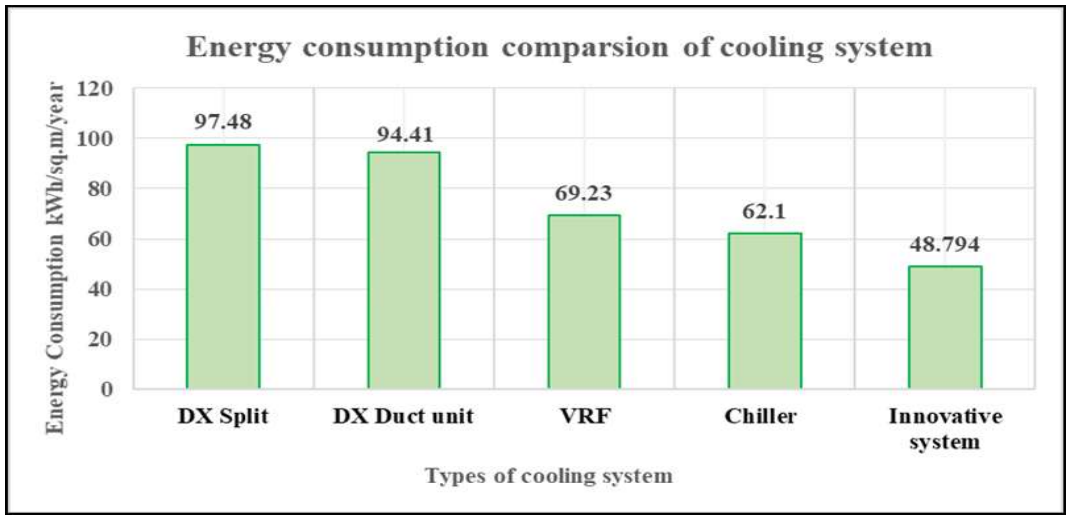

Figure 2.5: Comparison graph of energy consumed based on different cooling systems

Figure 2.6 Photographs showing energy saving machines installed in the institution

2.2 WATER

The total water requirement of the institution is 7,233 KLD. Wherein, 2,692 KLD the fresh water requirement of the institution which is sourced through TWAD supply and Bore Wells within the premises. The remaining water requirements of 4,541 KLD is recycled water from the Sewage Treatment Plants installed within the premises. The Ground Water NOC obtained from PWD and permission for the supply of fresh water has been obtained from TWARD. The total water requirement of the institution is provided in Table 2.3. The Figure 2.7 shows the water balance of the Institution.

The Sewage generation in the campus is estimated to be 4,541 KLD which is treated in Sewage Treatment Plants installed within the premises. STP of capacities 1 no. of 400 KLD, 1 no. of 300 KLD, 1 no. of 450 KLD, 1 no. of 800 KLD, 2 nos. of 600 KLD, 1 no. of 350 KLD, 2 nos. of 1000 KLD and 1 no. of 3000 KLD are installed. The photographs of the STP's are shown in Figure 2.8. Maintenance and Service for the STP's

is being done once in 3 months. All the STP's are installed on ground. No odour issues observed.

Table 2.3 Water Requirement of the Institution

Project component		Total Occupancy	Water requirement for Non- Flushing (LPCD)	Water requirement for Flushing (LPCD)	Total water requirement (Lts.)
Students Population	Days Scholars	7,842	@ 15 LPCD	@ 30 LPCD	@ 45 LPCD
			1,17,630	2,35,260	3,52,890
	Hostellers	22,595	@ 90 LPCD	@ 45 LPCD	@135 LPCD
			20,33,550	10,16,775	30,50,325
Staff Population	Non Residential Staff	3,220	@15 LPCD	@30 LPCD	@45 LPCD
			48,300	96,600	1,44,900
	Residential Staff	1,524	@90 LPCD	@ 45 LPCD	@ 135 LPCD
			1,37,160	68,580	2,05,740
Canteen and Food Court		450	@ 30 LPCD	@ 40 LPCD	@70 LPCD
			13,500	18,000	31,500
Mess		22,766	@ 15 LPCD	@ 30 LPCD	@ 45 LPCD
			3,41,490	6,82,980	10,24,470
Gardening		@ 4.15 L/ Sq.m/day for 5,84,005 Sq.m	-	24,23,000	24,23,000
Total Water Requirement			**26,91,630**	**45,41,195**	**72,32,825**
			2,692 KLD	**4,541 KLD**	**7,233 KLD**

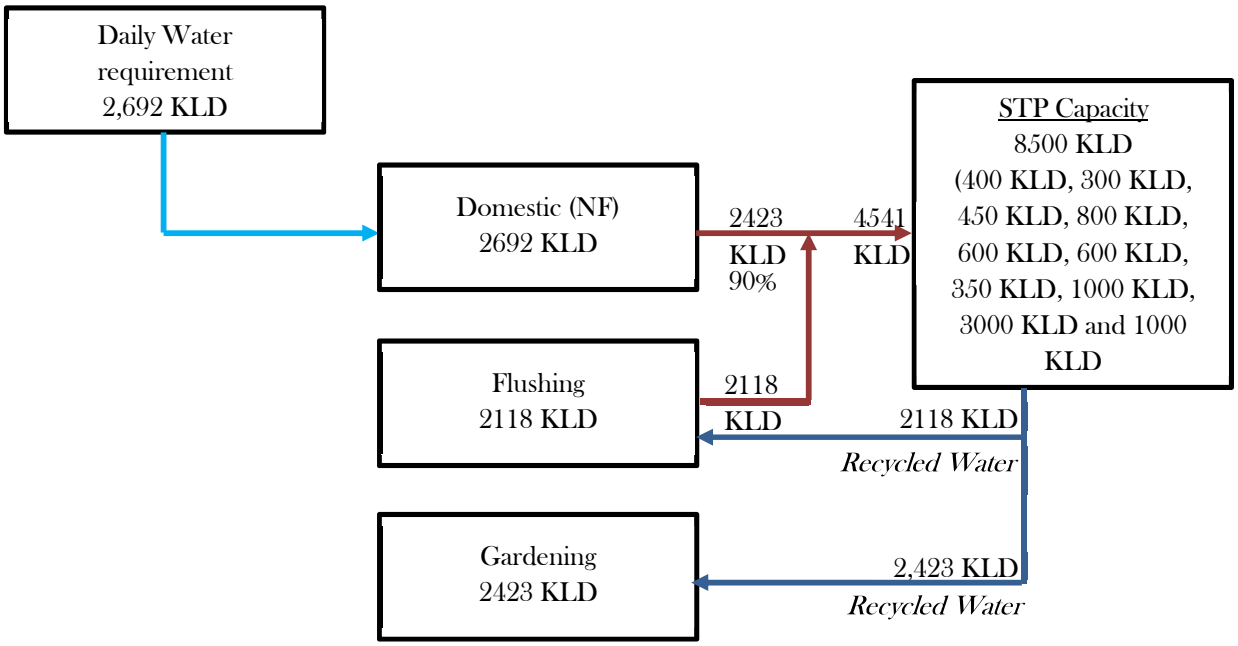

Figure 2.7: Water Balance

Figure 2.8: Photographs of the STP's installed within the premises.

<u>Water Conservation Measures:</u>

- ✓ Treated water from the STP is recycled for Toilet Flushing and Gardening.
- ✓ Low flow fixtures such as sensor based water taps in washrooms and sprinklers are used for irrigation. The Photograph of the Flushing Water Storage Tank and Sprinklers used for irrigation is shown in Figure 2.9

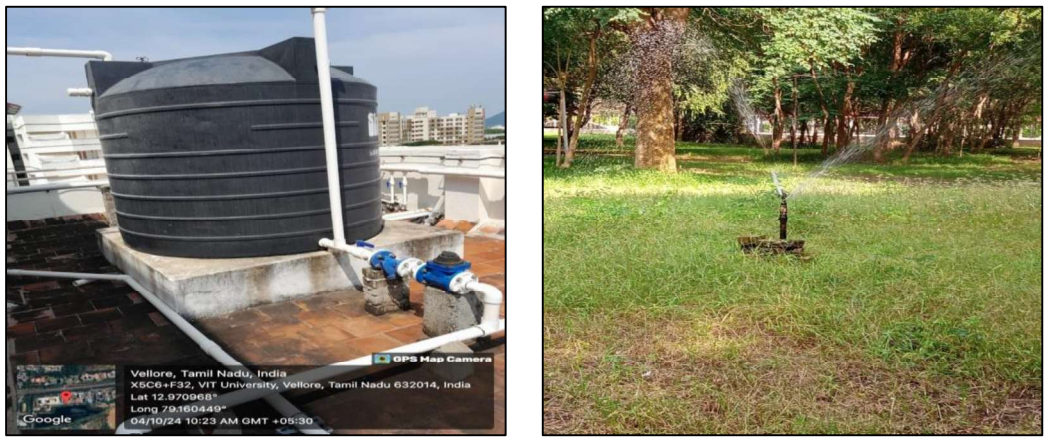

Figure 2.9: Photographs of Flushing Water Storage Tank and Sprinklers used for irrigation.

- ✓ Water meters are installed towards monitoring the consumption of water. The photograph of the water meter installed is shown in Figure 2.10
- ✓ To achieve the treated water quality standards of CPCB tertiary treatment such as Activated Carbon Filter/Dual Media Filter, Ultra Filtration System and UV/ Chlorination is provided in the Sewage Treatment Plants. The figure 2.11 shows the Tertiary Treatment Units installed in STP.

- ✓ The institution has also installed Online Continuous Emission and Effluent Monitoring System (OCEMS) towards monitoring the quality of the treated sewage. The figure 2.12 shows the OCEMS installed at the outlet of STP.

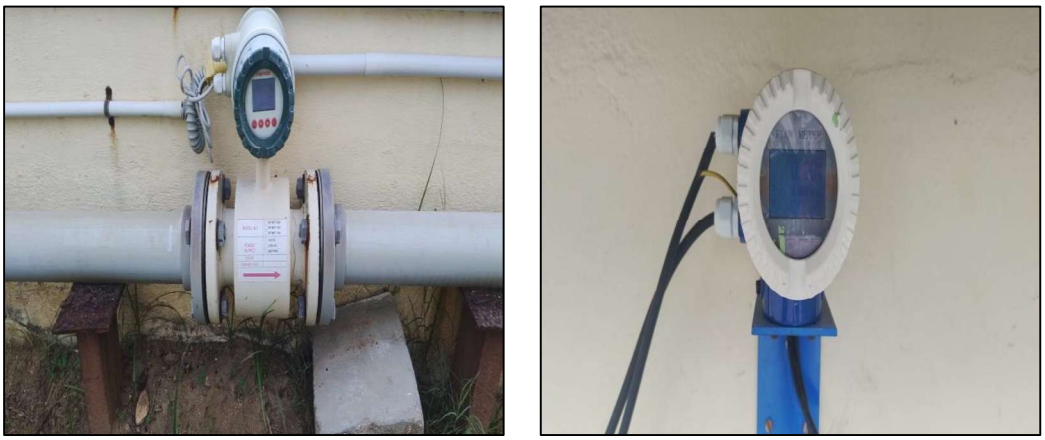

Figure 2.10: Photographs of Water meters installed towards monitoring total water consumption.

Figure 2.11: Photographs of Tertiary Treatment Units installed in STP

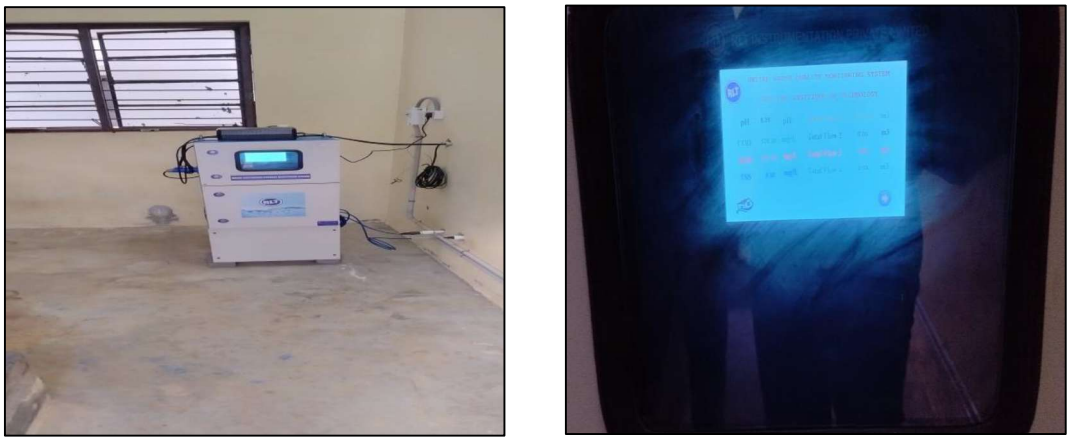

Figure 2.12: Photographs showing OCEMS installed at the outlet of STP

2.3 STORM WATER

The average annual rainfall in Vellore District is between 800 mm to 1,100 mm. The rainfall is unevenly distributed throughout the year, with the North-East Monsoon being the primary source of rain, contributing up to 60-70% of the total annual rainfall. As open spaces are converted into buildings, the natural recharge of groundwater has become difficult. Hence, the storm water collected from paved and landscape areas are being collected in the storm water drain which is connected to recharging pits and the excess water is collected in the artificial lake constructed and maintained by VIT. The storm water collected is treated in the WTP and then utilized for greenbelt development and flushing

Storm Water Management

- ✓ 35 nos. of recharge pits are provided towards ground water recharge. The details of the rainwater harvesting pits are given in Table 2.4. The figure 2.13 shows the Photograph of the recharge pits.

Table 2.4 Details of Rainwater harvesting Pit

Sl.	Name of the Building	Bore Height	No. of. Bores	Bore Dia	PVC Pipe Height	No.of Pipes
1	Main Building	Water sent to well through filter media				
2	Anna Auditorium	Water sent to well through filter media				
3	Library Building	52"0"	4 Nos.	9"	10" 0"	4 Nos.
4	Hexagon Building	52"0"	4 Nos.	9"	10" 0"	4 Nos.
5	L.H. M & N Block	53"0"	4 Nos.	9"	10" 0"	4 Nos.
6	Workshop & Health Centre	53"0"	4 Nos.	6 ½"	10" 0"	4 Nos.
7	Guest House	25"0"	1 No.	6 ½"	10" 0"	1 No.
8	Canteen	13"0"	1 No.	6 ½"	5" 0"	1 No.
9	Car parking area	50"0"	4 Nos.	9"	10" 0"	4 Nos.
10	L.H. „C" Block	58"0"	4 Nos.	6 ½"	10" 0"	4 Nos.
11	L.H.E & F block	Water sent to well through filter media				
13	CDMM building & car parking	65"0"	4nos	6 ½"	10"0"	4nos
14	Homeland	65"0"	4nos	6 ½"	10"0"	4nos
15	Men's Hostel „A" Block	41"0"	1 No.	9"	10" 0"	1 No.
16	Men's Hostel „A" Block	72"0"	2 Nos.	9"	10" 0"	2 Nos.
17	Men's Hostel „A & C" Block	85"0"	3 Nos.	9"	10" 0"	3 Nos.
18	Men's Hostel „D" Block	50"0"	3 Nos.	9"	10" 0"	3 Nos.
19	Men's Hostel „E" Block	62"0"	3 Nos.	9"	10" 0"	3 Nos.

Sl.	Name of the Building	Bore Height	No. of. Bores	Bore Dia	PVC Pipe Height	No.of Pipes
20	Men's Hostel „F" Block East	74"0"	3 Nos.	9"	10" 0"	3 Nos.
21	Men's Hostel „F" Block West	62"0"	3 Nos.	9"	10" 0"	3 Nos.
23	Men's Hostel K and L Block	45"0"	10 Nos	6"	10"0"	10 Nos
24	Men's Hostel M Block	250"0"	4 Nos	4 ½"	40"0"	4 Nos
25	Men's Hostel N Block	250"0"	4 Nos	4 ½"	40"0"	4 Nos
26	Biomass area	50"0"	6 Nos.	6 ½"	10" 0"	6 Nos.
27	Stadium	53"0"	4 Nos.	9"	10" 0"	4 Nos.
28	Stadium	37"0"	4 Nos.	9"	10" 0"	4 Nos.
29	Near Railway Gate (Culvert left)	60"0"	4 Nos.	6 ½ "	10" 0"	4 Nos.
30	Railway Gate (Culvert Right)	32"0"	4 Nos.	6 ½ "	10" 0"	4 Nos.
31	For Govt. Area V-Mess (Hill Area)	37"0"	3 Nos.	9"	10" 0"	3 Nos.
32	Stadium (Hill Area)	45"0"	3 Nos.	9"	10" 0"	3 Nos.
33	G Block	40"0"	3 Nos.	6"	10" 0"	3 Nos.
34	Swimming Pool Drain	50"0"	5 Nos.	6"	10" 0"	5 Nos.
35	Men's Hostel STP Plant area	45"0"	10 Nos.	6"	10" 0"	10 Nos.

✓ The Storm water drains are provided all along the internal roads of the institution. The photographs of the Storm water drain is shown in Figure 2.14.

Figure 2.13: Photographs of Rainwater Harvesting Pit

Figure 2.14: Photographs of Storm water drain

2.4 WASTE MANAGEMENT

The solid waste generated from the campus are the biodegradable waste e.g. domestic waste, food waste, horticulture waste etc., and recyclable waste, like plastic, paper etc., and inert fractions. The total solid waste generated from the campus is 12,744 kg/day. The details of the municipal solid waste generated from the campus are provided in table 2.5.

Table 2.5 Details of Municipal solid waste generation in Kg/day

Project component		Total Occupancy	Per Capita generation Kg/day	Total Bio-degradable waste generated kg/day	Total Non-bio degradable waste generated kg/day	Total Solid waste generated Kg/day
Students Population	Days Scholars	7,842	0.2	941	627	1,568
	Hostellers	22,595	0.2	2,711	1,808	4,519
Staff Population	Non Residential Staff	3,220	0.2	386	258	644
	Residential Staff	1,524	0.6	549	366	914
Canteen and Food Court		450	0.2	54	36	90
Mess		22,766	0.2	2,732	1,821	4,553
STP Sludge				455		455
Total (Kg/day)				**7,828**	**4,916**	**12,744**

Solid Waste Management

✓ Coloured bins separately for biodegradable, non-biodegradable waste and hazardous waste has been provided as per the Municipal Solid Waste (Management and Handling) Rules, 2000. Waste from such bins are collected separately on daily basis and taken to a separate centralized collection facility. Final segregation of solid waste into biodegradable, non-biodegradable, and inert fraction are done in the centralized collection facility. Private sweepers are engaged for handling domestic waste. Photographs of the Coloured Bins provided in Academic Blocks and centralized collection facility for segregation of solid waste is shown in figure 2.15.

Figure 2.15: Photographs showing Coloured Bins provided in Academic Blocks and Centralized Collection Facility for Solid waste segregation

✓ The non- biodegradable wastes are given to the authorized recyclers. The figure 2.16 shows the solid waste management plan of the institution.

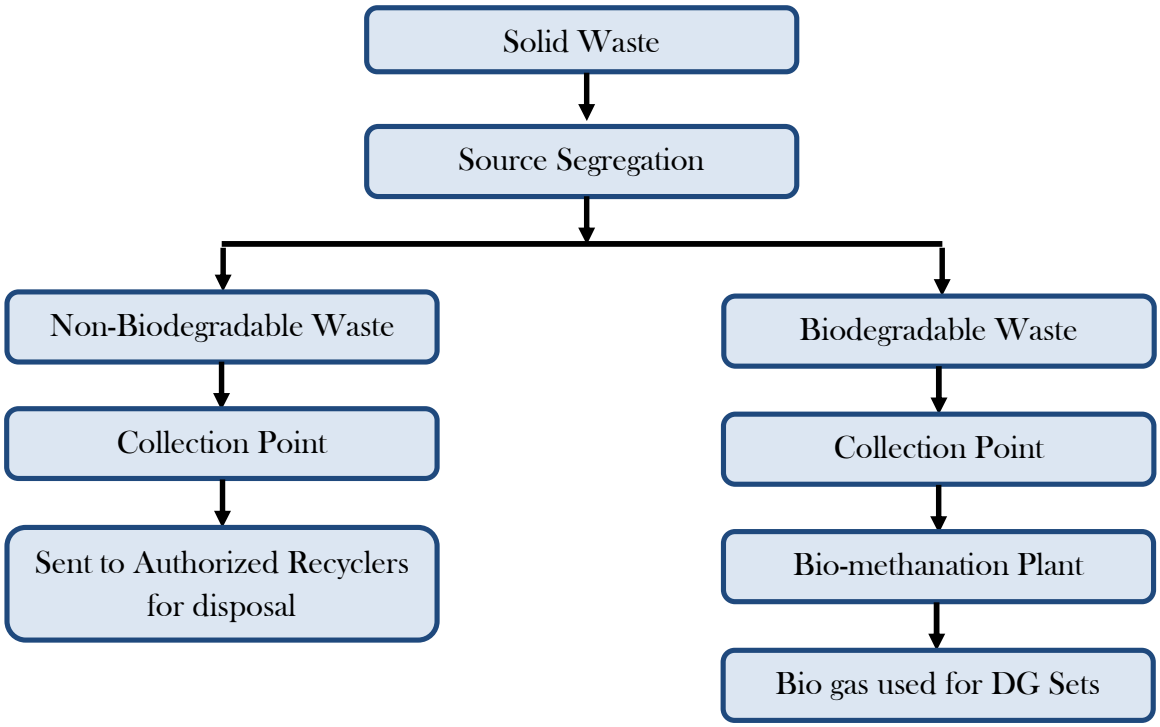

Figure 2.16 Solid waste management plan of the institution

- ✓ The biodegradable wastes are collected and treated through biomethanation plant and the bio gas used for DG sets at campus itself. The photograph of the Biomethanation Plant is shown in Figure 2.17

Figure 2.17: Photographs showing Biomethanation Plant

- ✓ Horticulture wastes leaves, grass and vegetative residues are being collected at the secured Location such that it will not hinder daily activity and then sent to the vermi-compost unit were it is treated with the farm yard manure to produce vermi-compost. The vermi-compost obtained from the unit is used manure for greenbelt developed within the campus and the excess manure is sold to farmers of the nearby villages. The photograph of the vermi compost unit is shown in figure 2.18

Figure 2.18: Photographs showing vermi compost unit within the premises

- ✓ The solidified sludge from the STP is being stabilized and dewatered, composted along with the organic wastes and used as manure. The figure 2.18 shows the mulching of sludge generated from the STP.
- ✓ The food waste generated from the canteen is sent to nearby villages for cattle feeding.
- ✓ Bio gas plant of 300 m3 capacity is installed. The raw material used for the operation of the Biogas plant is the Sludge generated from the Sewage Treatment Plant. The power generated is utilized for the operation of Sewage Treatment Plant

Figure 2.19: Photographs showing mulching of sludge generated from the STP

Hazardous Waste Management

The Hazardous waste generated from the institution activity is the Used Oil generated from the usage of DG Sets (31 nos.).

Hazardous Waste Management:

- ✓ Used Oil is stored in MS Drums are placed inside the HW storage Shed with impervious floor. The Photograph of the Used Oil is stored in MS Drums and HW storage Shed is shown in Figure 2.20
- ✓ The Hazardous Waste generated is disposed to the TNPCB authorized HW Recycler.

Figure 2.20: Photographs showing Used Oil is stored in MS Drums and HW storage Shed

Chemical Waste Management

The Chemical waste generated from the institution is mainly from solvents, reagents and by-products of the laboratory. These wastes are carefully segregated and stored in compliance with safety regulations to prevent contamination. The chemical waste is sent to Authorized recyclers for disposal.

Bio Medical Waste (BMW)

The Bio medical waste generated from the Institution are the cottons, expired medicines from the medical centre, syringes from the Health Care Facility, sanitary napkins and animal carcasses from the Research Centre (School of Bio Sciences and Technology).

Bio Medical Waste (BMW) Management

The Institution has a BMW agreement in place with Authorized Common Bio Medical Waste Management Facility.

2.5 AIR QUALITY AND NOISE LEVEL

Air Quality:

The major source of air pollution is from the DG Sets (31 nos.). The biodegradable waste generated from the campus is disposed of regularly to prevent mosquito breeding and odour.

Air Pollution Control Measures:

- ✓ DG sets are provided with Stack as per the TNPCB norms.
- ✓ Burning of Waste inside the premises is prohibited.

Noise Level:

The increase in noise level in an institutional campus may mainly be due to DG sets, Hydraulic pumps in STP, during operation of machines in laboratories and Transit movement.

Measures adopted to reduce noise level:

- ✓ Acoustic Enclosure for DG Sets
- ✓ Provision of vibration pads to the equipment's and machineries
- ✓ Regular maintenance of the equipment's/machinery once in 6 months
- ✓ Students are encouraged to use Bicycles, Shuttle cabs run during the active hours of the day continuously.

The photograph of the DG sets provided with acoustic enclosure and stack height as per the CPCB norms is shown in Figure 2.21

Figure 2.21: Photograph showing DG Sets provided with acoustic enclosure and stack height as per CPCB norms

2.6 TRAFFIC MOVEMENT SYSTEM

The traffic movement system is planned in such a way that the internal roads are minimum of 6 m for free movement of vehicles. Green facade is developed all along the roads to control the air pollution and reduce the noise level due to the movement of vehicles. The photograph showing the width of the roads and Shuttle cabs are shown in figure 2.22


Figure 2.21: Photograph showing the width of the roads and Shuttle cabs

2.7 PROVISIONS FOR DIFFERENTLY ABLED PEOPLE

The Service and Support for Differently Abled Learners (SASDAL) in VIT operates under the Office of Students' Welfare. The purpose of SASDAL is to provide helping hands to support differently-abled learners to continue their education in a smooth manner. The details pertaining to differently-abled students is being collected at the time of joining the institute and required support is provided. The figure 2.22 shows the photograph of facilities provided by the differently abled people.

The facilities in the campus for the differently abled people:

- ✓ Ramp structures are installed adjacent to the staircases at the entrance of all the building blocks to ensure trouble-free movement.
- ✓ Inside all the building blocks, lifts are there for them to move from one floor to another.
- ✓ Accessible toilets are provided for differently-abled learners.
- ✓ Care is taken by each and every faculty member to ensure the learners are not getting deprived in any manner.
- ✓ Based on the circumstances, extra time is offered for them to complete the examination based on their disability.
- ✓ A scribe facility is provided for differently-abled learners based on the requirements.
- ✓ Stress caused by different reasons is counselled and supported by therapies.

Figure 2.22: Photographs of facilities provided by the differently abled people

2.8 GREENBELT DEVELOPMENT

The greenbelt is provided all along the roads and the boundary of the buildings in the Institution. The Campus has developed its own nursery within the campus. The water required for the greenbelt is sourced through the recycled water from the STP and WTP within the campus. The figure 2.23 shows the greenbelt developed within the institution.

Figure 2.23: Photographs of Greenbelt

CHAPTER 3
INITIATIVES OF THE INSTITUTION TOWARDS SUSTAINABLE DEVELOPMENT GOALS

✓ **SDG 1 – No Poverty**

Centre for Sustainable Rural Development and Research Studies (CSRD&RS) of VIT works on various development projects. elated to sustainable rural development including skill development, agriculture, climate change initiates and rural and tribal community development activities. The CSRD&RS has so far trained 2,923 youths. Additionally, 25- and 15-day special coaching programs were held for 434 entrepreneurs under the NEEDS scheme. The Figure 3.1 shows the Photograph of the Skill development training programme for women conducted by VIT

Figure 3.1: Photograph of the Skill development training programme for women conducted by VIT

✓ **SDG 2 – Zero Hunger**

VIT made significant strides towards achieving Zero Hunger through its research and development efforts. It has conducts Agri Expo every year in collaboration with Centre for Sustainable Rural Development and Research Studies. The theme of the Expo for the year 2024 is "Technological Innovation in agriculture". The institute aims to bridge the gap between farmers and technology. The figure 2.3 shows the newspaper advertisement of the Agri Expo conducted by VIT.

THE NEW INDIAN EXPRESS

03 VELLORE SATURDAY 31.08.2024

With over 130 stalls, VIT fair aims to bridge gap between farmers & tech

Collector emphasises need to integrate robotics & other advanced technologies in farming

EXPRESS NEWS SERVICE @ Vellore

INDIA'S food grain production must increase to 350 metric tonnes by 2030 to meet the escalating demand, said Collector V R Subbulakshmi, while inaugurating the two-day agricultural exhibition at VIT University here on Friday.

The university's agriculture department, in collaboration with its Centre for Sustainable Rural Development and Research Studies , annually hosts 'Uzhavar Kalanjiam,' an agricultural exhibition and seminar. The 7th Annual Farmers' Repository Programme is scheduled for August 30 and 31 at the campus with the theme 'Technological Innovation in Agriculture' focussing on 'Agriculture in harmony with nature.'

The event featured over 130 exhibition stalls, aiming to promote technology-driven agriculture and organic farming in the districts of Vellore, Tiruvannamalai, Ranipet, Tirupattur, and other parts of Tamil Nadu. It was presided over by VIT Vice-Chancellor Dr G V Selvam. Thiruvalluvar University Vice-Chancellor T Arumugam was also present.

Collector Subbulaxmi along with VIT Vice Chancellor Dr G Selvam inaugurated 'Uzhavar Kalanjiyam' exhibition held at VIT Vellore on Friday | S DINESH

The collector stressed the urgent need for advanced technologies to boost productivity, highlighting that India's food grain production currently stands at 300 metric tonnes (approximately), but this figure must increase to 350 metric tonnes by 2030 to meet the escalating demand. She emphasised the need to integrate robotics and other advanced technologies in farming and ensure that these innovations are accessible to farmers.

"For the past seven years, VIT has played a crucial role in bridging the gap between technology and farmers. Only a few institutions like VIT engage with the farmers directly, demonstrating how these technologies can benefit them," she said.

Dr G V Selvam pointed out the trend where constructing buildings seems more profitable than cultivating crops, and stressed the need to protect farmlands for future generations. Hence, VIT introduced an agriculture course to inspire the younger generation to take up farming, realising the Chancellor's dream.

Figure 3.2 Newspaper Advertisement of the Uzhavar Kalanjiyam conducted in VIT

- ✓ **SDG 3 – Good Health and Wellbeing**

  VIT has developed sports facilities for both indoor and outdoor games for the Students/Staff. Also, Physical Fitness Centre's are available. Blood Donation Camp was conducted in collaboration with Youth Red Cross Club of VIT. The figure 3.3 shows the newspaper advertisement of the Blood Donation Camp conducted in VIT.

- ✓ **SDG 4 – Quality Education**

  VIT aims in providing the best education for the students by recruiting the eminent professors and lecturers. It conducts various International Guest lectures for the students.

THE HINDU 2 Friday, March 15, 2024 TIRUPATI

VIT organises blood donation camp on its Vellore campus

The camp was inaugurated by G. Viswanathan, founder and chancellor, VIT, in the presence of G.V. Selvam, vice-president, VIT.

The Hindu Bureau
VELLORE

The Vellore Institute of Technology (VIT) organised a blood donation camp on its campus in Vellore on Thursday.

According to a press release, as many as 651 units of blood was donated by students of VIT. It was jointly organised by Youth Red Cross Club of VIT, Christian Medical College, Sri Narayani Hospital & Research Centre, and Government Vellore Medical College.

The camp was inaugurated by G. Viswanathan, founder and chancellor, VIT, in the presence of G.V. Selvam, vice-president, VIT, the release said.

Figure 3.3: Newspaper Advertisement of the Blood Donation Camp conducted in VIT

- ✓ **SDG *5* – Gender Equality**

  VIT has conducted the 48th All India Sociological Conference, 2023 to address the inequalities. The figure 3.4 shows the Newspaper advertisement of the 48th All India Sociological Conference, 2023 conducted in VIT.

- ✓ **SDG 6 – Clean Water and Sanitation**

  VIT has implemented Integrated water resource management at all levels by providing the following: Storm water drains connecting to recharge pits. Also, an artificial lake is constructed in the campus to collect the water from the storm water drains. The water collected in the lake is reused for flushing and gardening after treatment in the Water Treatment Plant (WTP). VIT maintains the PWD lake inside the premises which acts as a as a buffer zone of freshwater. The maintenance of the water body is done with utmost priority. Stabilization of soil and plantation of native species along with the edge of the lake was done for shoreline protection. The lake water quality is regularly monitored to ensure healthy environment for aquatic species. VIT has taken many steps such as taps with timer facilities and sensors; ground penetrating radar (GPR) to detect the leak or pressure drop in the water distribution system. In order to quantify the water utilization (demand), water meter have been

installed to all the vital nodal points. Sensor based wash basin taps are also provided. The sewage generated from the institutional activity is treated in STP and used for flushing and gardening. The figure 3.5 shows the Photograph of the Storm water drain, Artificial Lake, WTP and PWD Lake, respectively.

THE NEW INDIAN EXPRESS

03 VELLORE FRIDAY 29.12.2023

VIT meet mulls ways to address inequalities

Three-day All-India Sociological Conference commences; PTR demands access to quality education as panacea

PRAVEENA SA @ Vellore

THE 48th All-India Sociological Conference, organised by the Indian Sociological Society, commenced at the Vellore Institute of Technology (VIT) here on Thursday. Chief guest Dr Palanivel Thiaga Rajan, the Tamil Nadu Minister for Information Technology and Digital Services, stressed on the need to provide access to quality education so as to reduce inequalities, unemployment, and poverty, among others.

The topic of the conference was "The Crises of the 21st Century and the Way Forward."

The minister delved into the root causes of contemporary crises, citing natural disasters in Chennai and southern Tamil Nadu due to climate change, challenges posed by viral genetics, and global pandemics. He drew attention to international crises, such as armed conflicts in Ukraine and Palestine, expressing concern over the nature of humanity and the declining role of global institutions like the United Nations. Rajan underscored the decay in society by identifying institutions in decline as well as flagged unemployment, underemployment, and poverty as alarming trends.

Proposing solutions, he emphasised on enhancing the quality and accessibility of education, advocating for universal access, and a focus on the humanities to create better citizens. Addressing wealth inequality within a capitalist model, he urged sociologists to collect and analyse the data to understand and fight inequality.

Turning to governance, Rajan recommended devolving power to local governments for enhanced accountability and true democracy, citing examples from Singapore, Australia, and Canada. Advocating for a middle-tier of enterprises, particularly in the MSME sector, Rajan proposed creation of a more efficient market structure that can generate employment. He also called for global thought and moral leadership to address crises in the hyper-integrated global economy, emphasising also on the collective priority for environmental sustainability. He also urged global progress on greenhouse gas reduction and climate change.

Despite acknowledging that Tamil Nadu is far from perfect, Rajan said, "We are well ahead of the national average and can actually be an example in many ways for the rest of the country."

VIT Chancellor, Dr G Viswanathan, emphasised Sociology's pivotal role in surpassing the challenges of the 21st century, citing India's diversity and the necessity for democratic and economic advancements. He urged increased investment in education, technological advancement, and government support to compete globally and address challenges like natural disasters, urbanisation, and population growth.

Chandrashekhar Bhatt, the former professor of Sociology at the University of Hyderabad, and Virginius XaXa, the former professor of Sociology at the Delhi School of Economics, New Delhi, were presented with the lifetime achievement award. More than 900 delegates, sociologists, and professors are participating in the three-day conference, which began on Thursday.

Indian Sociological Society president Abha Chauhan as well as VIT vice-presidents G V Selvam and Shankar Viswanathan were among the participants.

The topics for the four plenary sessions at the conference are: Increasing Social Inequalities, Conflict and Violence, Environmental and Health Concerns, Challenges and Crisis in Sustaining Society, and Space Exploration and Earthly Challenges.

Tamil Nadu Minister Palanivel Thiyaga Rajan addresses the All-India Sociological Conference held at VIT, Vellore, on Thursday | STORY

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Figure 3.4 Newspaper Advertisement of the 48th All India Sociological Conference, 2023 conducted by VIT

(a)

(b)

(c)

(d)

Figure 3.5 (a), (b), (c) and (d) Photograph of the Storm water drain, Artificial Lake, WTP and PWD Lake, respectively

SDG 7: Affordable and Clean Energy:

VIT has dedicated to achieve the SDG 7 by implementing various energy-efficient initiatves. With a rooftop solar power and use of LED lights in all its facilities. VIT employs biogas, bio mass power generation and third-party wind power purchase. The Photograph of the bio mass plant is shown in figure 3.6

Figure 3.6 Photograph of bio mass plant

SDG 8: Decent Work and Economic Growth

VIT provides teaching, learning and research infrastructure to students and faculty members to excel in their career and to achieve sustainable economic growth, productive employment and decent work. The institution has signed various MOUs to advance excellence in education and research with the following universities:

- ✓ Dublin City University (DCU), Ireland

- ✓ Leibniz Universitat Hannover (LUH), Germany
- ✓ KTH Royal Institute of Technology, Sweden
- ✓ Cranfield University, UK
- ✓ The University of Stuttgart, Germany
- ✓ George Washington University, USA
- ✓ California State University, Los Angeles, USA
- ✓ University of Texas at Arlington, Dallas, USA

SDG 9: Industrial Innovation and Infrastructure

The Career Development Cell (CDC) and the Sponsored Research and Industrial Consultancy (SPORIC) at VIT are responsible for the establishments of connections between the industry and various departments within the institution. The institute has cultivated partnerships with industry through the implementation of an Industry Guest Lecture for all the courses offered across all the programme. VIT has been organizing an annual event known as BIOSUMMIT, with the aim to bridge the gap between Industry and Academia. The newspaper advertisement for the 11th BIOSUMMIT conducted in VIT is shown in figure 3.7.

THE TIMES OF INDIA, CHENNAI
SATURDAY, OCTOBER 5, 2024

8

VIT inaugurates 11th bio summit

Chennai: Vellore Institute of Technology (VIT) inaugurated the 11th edition of the VIT Bio Summit at its Vellore campus on Friday. VIT vice-president G V Selvam urged students to explore research on organic farming and reducing chemical usage in agriculture to improve health outcomes. TNN

Figure 3.7 Newspaper advertisement for the 11th BIOSUMMIT conducted in VIT

SDG 10: Reduced Inequalities

The STARS (Support The Advancement of Rural Students) Scheme of VIT- a fully funded education for economically challenged students program which provides free education for the top-ranking students from all districts of Tamil Nadu, ensures free education to one top-ranking male and female student of every district.

The CSRD & RS acts as a bond between VIT and society, providing better and more effective services for developing rural areas through various innovative initiatives. Under the guidance of the faculty and staff, VIT students engage in social upliftment activities to foster rural community development through various projects and programs.

SDG 11: Sustainable Cities and Communities

The institution through its eco-friendly and green initiatives such as water conservation, energy utilization and wastewater recycling to maintain the campus as green campus. Awareness programmes for the World Bicycle Day and Water Conservation Week were conducted. The Photographs of the Bicycle rally and Water Conservation Week the conducted in VIT is shown in Figure 3.8 and Figure 3.9, respectively. Swachhata Hi Seva (SHS) campaign was conducted by VIT at Katpadi Railway Station to promote cleanliness and sanitation and the photograph of the Swachhata Hi Seva campaign is shown in Figure 3.10. Promotional activities were conducted beyond the campus for energy conservation. Figure 3.11 shows the Photograph of the Walkathon conducted during Energy Conservation Week.

Figure 3.8 Photograph of the Bicycle Rally

Figure 3.9 Photograph of the Water Conservation week

Figure 3.10 Photograph showing Swachhata Hi Seva Campaign

Figure 3.11 Photograph showing the photograph of the Walkathon conducted during Energy Conservation Week

SDG 12: Responsible Consumption and Production

The institution focuses on reducing solid, liquid and energy consumption. The solid waste generated from the institution is managed efficiently. The biodegradable waste is treated in the bio methanation plant and Vermi compost unit. Food waste from the canteen and kitchen is sent for cattle feeding in the nearby villages. The Bio fuel produced is used as fuel for the buses/cars of the institution. The waste water is treated in WTP and STP to the bathing quality standards of CPCB.

SDG 13: Climate Action

The institution aims to achieve net zero emissions by 2050 by striking a balance between the amount of greenhouse gas produced and those removed from the atmosphere. The institute has its own policy for Environment and Climate. The policy aims for a 10% reduction in water consumption, waste generation, and energy consumption by the academic year 2025-2026, compared to the academic year 2022-2023, by providing sufficient resources to achieve this goal.

SDG 14: Life Below Water

The institution organises conferences, workshops and seminars dedicated to water conservation and management techniques to raise awareness and promote sustainable practices. The figure 3.12 shows the photograph which encompasses Plastic free campus.

Figure 3.12: Photograph showing the restriction in the usage of Plastics

SDG 15: Life on Land

The soil quality is improved by the addition of organic manure on day-to-day basis. Plantation drives and awareness programme have been conducted in the campus to raise awareness among students towards the importance of the life on land.

SDG 16: Peace Justice and Strong Institutions

In the institution there are various clubs say: Forum for Empowering people through Social Innovation and Entertainment (FEPSI Club), Youth Red Cross Association (YRC Club), Ayuda (Club), Tamil Literacy Association (TLB Club), VIT Mathematical Association (VITMAS Chapter) and Community Radio Club which provides lectures, quiz and competitions based on the SDG 16 to provide awareness among students.

SDG 17: Partnership for the Goals

VIT has a significant global footprint, having signed more than 400 international memorandums of understanding. Students are assisted in their exploration of diverse surroundings and cultures worldwide by the Vellore Institute of Technology's International Relations office, which maintains connections with institutions and universities worldwide. The institute's international relations staff assists in establishing connections between its teachers and students and other overseas institutions. The global locations of the foreign partner universities include the United States, Canada, the United Kingdom, Australia, Asia-Pacific, Europe, the Middle East, Africa, and South America

CHAPTER 4
ENVIRONMENTAL POLICY AND MANAGEMENT SYSTEMS

Preamble of Environmental Policy:

The VIT is committed to maximizing its positive impact and minimizing its negative environmental impact to develop a more sustainable world. The policy was developed to conserve natural resource like water and biodiversity, optimize energy efficiency, manage waste, and educate about climate change and sustainability. The institute will educate the all VITians about best practices to improve the environmental footprint of the campus and its operations.

Environmental Policy Statement:

- ✓ Increase the plantation of tress and should be maintained in and around the campus.
- ✓ Maintain the green cover area with optimal irrigation technique
- ✓ Reuse the treated water to reduce the consumption of fresh water
- ✓ Implement the zero liquid discharge requirements
- ✓ Maintain biodiversity by conducting tree sapling plantations
- ✓ Utilize non-renewable resources optimally
- ✓ Encourage the utilization of renewable energy sources
- ✓ Perform waste management as per the requirements of Tamil Nadu state pollution control board
- ✓ Promote the concept of reducing, reusing, and recycling where is applicable.

Environmental Policy Frame Work:

- ✓ In our institution we have energy efficient and conservation by using LED lights, Acs are replaced by HVAC cooling system, sensor and solar based heat pump are used to conserve energy.
- ✓ Renewable energy resources are also used
- ✓ To avoid air pollution bicycles are encouraged in the campus
- ✓ Rainwater harvesting are done in well planned manner for reuse
- ✓ Waste water are treated by STP and WTP for reuse.
- ✓ We practices paper less documentation.

Environmental Management Committee:

The institution has set up a committee for the Sustainable initiatives to achieve the Sustainable Development Goals (SDGs). The Committee for Sustainability Initiatives is provided in Table 4.1.

Table 4.1: Committee for Sustainable Initiatives

S. No.	Name With Designation	
1	Dr. Partha Sharathi Mallick, Pro-Vice-Chancellor, VIT Vellore	Chairman
2	Dr. Sekar S K, Professor Higher Academic Grade & Director-Estates, SCE	Member
3	Dr. Palanisamy K, Professor Grade 1 & Dy. Dir-EM & Projects, SELECT	Member
4	Dr. Shantha Kumar S, Professor Grade 2 & Director-CCE	Member
5	Dr. Senthil Kumar A, Professor Higher Academic Grade & Director, CO_2 Research	Member
6	Dr. Chandrasekaran S.S, Professor Grade 2 & Director, CDMM	Member
7	Dr. Porpatham E, Professor Higher Academic Grade & Director, ARC	Member
8	Dr. Sundara Rajan C.R, Professor Grade 1 & Asst. Director-CSRD& RS, VITBS	Member
9	Dr. Mahenthiran S, Assistant Professor Sr. Grade 2, HOD, Environmental and Water Resources Engineering	Member
10	Dr. Sujatha R, Associate Professor Sr. & Asst. Director-SW	Member
11	Dr. Balaji K, Assistant Professor Sr. Grade 2, SMEC	Member

CHAPTER 5
AUDIT SUMMARY AND CONCLUSION

The audit covers energy consumption, water usage, waste management, carbon emissions, and sustainable procurement practices of the institution.

Key Findings of the Audit are as follows:

Energy Utilization:

The institution utilizes energy efficiently by investing in renewable resources, such as wind and solar energy, and by implementing innovative cooling systems.

Water Conservation:

Despite high water demand, the institution strives to reduce total water usage by installing water meters to monitor daily consumption and detect potential leaks. Conservation efforts include the use of water-saving fixtures, sprinklers for irrigation, and recycled water for flushing and gardening.

Waste Management:

The institution generates various types of waste, including biodegradable, non-biodegradable, chemical, e-waste, hazardous, and biomedical waste. All waste is disposed of through authorized recyclers under formal agreements. The institution also strives for paperless documentation and has designated plastic-free zones on campus.

Emission Control:

Green facades have been installed along campus roads to help reduce vehicle emissions and improve air quality. Additionally, approximately 30% of the total fuel required for transportation is biofuel.

Landscaping:

Greenbelts and landscaping have been developed along the boundaries of each building and throughout the campus to enhance the environment.

Storm Water and Rainwater Harvesting:

The institution maintains a stormwater drainage system and a rainwater harvesting system to effectively manage rainfall, particularly during the monsoon season.

Path to Sustainability:

The institution has implemented sustainable procurement and investment policies, with a goal to achieve net-zero emissions by 2050.

SDG Commitment:

The institution is committed to achieving the United Nations Sustainable Development Goals (SDGs), aligning its operations with global sustainability efforts.

Corporate Social Responsibility:

The institution has donated ₹1 crore to the Kerala Chief Minister's Distress Relief Fund, ₹1.57 crore to the Andhra Pradesh CM Relief Fund, and ₹1.50 crore to the Telangana CM Relief Fund for flood relief measures during August and September 2024.

Other Initiatives:

The institution's CSRD & RS department has organized training in 22 skill trades for employment and self-employment, training 2,923 youths. Additionally, 25- and 15-day special coaching programs were held for 434 entrepreneurs under the NEEDS scheme. The institution, as a JLG Promoting Institution with NABARD in Tiruvannamalai, supports awareness and capacity building under the JLG Scheme in Jawadhu Hills, Tiruvannamalai District, across 11 Village Panchayats. A Mega Loan Mela is held annually for disbursement of loans to JLGs for livelihood development activities with subsidies for farmers.

Conclusion:

The institution has shown a strong commitment to environmental sustainability by adopting renewable energy, conserving water, efficient waste management practicies, and reducing emissions. Through sustainable procurement, landscaping, and emissions control, the institution aligns with the United Nations Sustainable Development Goals. Its community contributions and global university partnerships highlight its dedication to both social and environmental responsibilities. With a target of net-zero emissions by 2050, the institution sets a high standard for balancing academic excellence with ecological stewardship. This Green Audit reaffirms its role as a leader in sustainability and long-term environmental well-being.