SRI INDU COLLEGE OF ENGINEERING AND TECHNOLOGY (AUTONOMOUS)

INTERNAL ATMOSPHERIC AUDIT

CIRCULAR

Date: 18.01.2023

As part of quality initiatives, to provide the holistic eco-friendly environment for the students and faculty community, our college management is taking extensive effort in maintaining friendly atmosphere, green campus etc., at par with the standards. In order to ensure the best practice, the college is initiating "INTERNAL AUDIT PROCESS" on various atmospheric parameters for the academic year 2022-23:

- i) Green Campus
- ii) Environment
- iii) Energy
- iv) E-Waste Management

So, all the HODs, Functional Heads, Administrative Heads, Autonomous Sections, various Maintenance departments are requested to keep yours details ready for demonstrating to the internal audit team.

Date of Audit

: 21.01.2023

S. No	Auditors	Designation	Audit Responsibility				
1	Prof Rajendra Babu,	HOD/Civil					
2	Prof.M.Srinivasa Rao	HOD/Mech	Environment Audit				
3	Prof.J.Rakesh Sharan	HOD/EEE					
4	Dr.N.C.Sendhilkumar	IQAC Coordinator	Energy Audit				
5	Prof.E.Parusha Ramu	Event Coordinator	Green Audit & E-				
6	Mr.L. Satyanarayana	Administrative Officer	Waste Management				
7	Mr.G.Balakrishna Reddy	Administrative Officer	Audit				

All your cooperation is highly appreciated.

MR-Convener

Principal

PRINCIPAL

A) Indu College of Engineering and Technology (VIII): SHERIGUDA-501 510,

forahimostnam(M), R.R.Dist.

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Engineering &

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SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY

(an Autonomous Institution under UGC, New Delhi)
Recognized under 2(f) & 12(B) of UGC Act 1956
Permanently Affiliated to JNTUH, Accredited by NAAC & NBA
Sheriguda(V), Ibrahimpatnam(M), Ranga Reddy Dist. – 501 510

GREEN, ENVIRONMENT, E-WASTE & ENERGY INTERNAL AUDIT REPORT

(2022-2023 As on 21/01/2023)



Internal Audit Report Prepared by

Prof.K.Rajendra Babu, HOD/Civil Prof.M.Srinivasa Rao, HOD/Mech Prof.J.Rakesh Sharan, HOD/EEE

Prof.E.Parusha Ramu, Event Coordinator Mr.L. Satyanarayana, Administrative Officer Mr.G.Balakrishna Reddy, Administrative Officer



Acknowledgement

Thanks to our Management of Sri Indu College of Engineering and Technology for assigning this important work of Internal Green Audit & Energy Audit. We appreciate the cooperation extended to our team during the entire process.

Our special thanks are due to:

- * Principal-Dr.G.Suresh
- * Team of colleagues

For giving us necessary inputs to carryout this very vital exercise of Internal Audit Process.

We are also thankful to Prof. K. Ashok Babu (NAAC Co-ordinator) and other staff members who we are actively involved while collecting the data and conducting field measurements.

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Executive Summary:

The rapid urbanization and economic development at local, regional and global level has led to several environmental and ecological crises. On this background it becomes essential to adopt the system of the Green Campus for the institute which will lead for sustainable development.

Sri Indu College of engineering and Technology is deeply concerned and unconditionally believes that there is an urgent need to address these fundamental problems and reverse the trends. The purpose of the audit was to ensure that the practices followed in the campus are in accordance with the Green Policy & Energy Policy adopted by the institution. The methodology included: preparation and filling up of questionnaire, physical inspection of the campus, observation and review of the documentation, interviewing kev and data analysis, measurements persons and recommendations. It works on the several facets of 'Green Campus' including Water Conservation, Tree Plantation, Waste Management, Paperless Work, Alternative Energy and Mapping of Biodiversity. With this in mind, the specific objectives of the audit was to evaluate the adequacy of the management control frame work of environment sustainability as well as the degree to which the Departments are in compliance with the applicable regulations, policies and standards. It can make a tremendous impact on student health and learning college operational costs and the environment. The criteria, methods and recommendations used in the audit were based on the identified risks.

Green Audit Summary

SI.NO	AREA	OBSERVATION	REMARK
1	Solid waste Management	waste bins are placed separately for dry and wet waste at every corner of the corridor, Organic waste like leaves, food waste etc	college towards use of solid
2	Liquid waste Management	However rain water harvesting is used to recharge the ground level water.	Good imitative taken by college towards Water Conservation.
3	Plastic free campus	College is taking initiative by displaying banner about awareness of plastic free campus.	•
4	E- waste Management	Had MoU with agency for E waste management	

Energy Audit Summary

Sl. No	Equipment	Proposed action	Result for proposed action
1	Lighting equipment 40W	Replaced 40W conventional light with 18W LED Tube light	Total no. of light fittings- 736 No's Total no. of presently operated - 736Nos Total no. of light fitting to be replaced=736 Nos Total energy consumption =21,196.08 KWH Expected Energy Consumption=47,104 KWH Total energy Saved per month=25,907.2 KWH
2	Fan System	Replace present ceiling fan consuming 78W with 40W. In the campus where usage is high this conservation measure will produce good saving	Total no. of fans used in campus =499 Nos No. of fans to be replaced= 499 Nos The total current consumption=39,920 KWH

1. Introduction

Green Audit & Energy audit can be defined as systematic identification, quantification, recording, reporting and analysis of components of environmental diversity, energy usage. The 'Green Audit' aims to analyze environmental practices within and outside the college campus, which will have an impact on the eco-friendly ambience. It was initiated with the motive of inspecting the work conducted within the organizations whose exercises can cause risk to the health of inhabitants and the environment. Through Green Audit, one gets a direction as how to improve the condition of environment and there are various factors that have determined the growth of carrying out GreenAudit.

The 'Energy audit' aims it is a technique used to establish the pattern of energy use, and identifies the areas where energy can be saved or whereenergy can be used judiciously. An energy audit consists of a detailed examination of how a facility uses energy, what the facility pays for that energy, and finally, a recommended program for changes in operating practices or energy consuming equipment that will effectively save on energy bills.

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

About the College

Sri Indu College of Engineering and Technology was established by New Loyola Model Educational Society - 2006, Vanasthalipuram, Hyderabad under the chairmanship of Sri. R. Venkat Rao. Under the same management, Sri Indu Institute of Engineering and Technology is also in the field of education by New Loyola model education society - 1979. The society is having proven rich experience in the field of education for more than 43 years with an intension and commitment to impart school education and Technical education of highest quality.

The institution is located on scenic campus of 50 acres on the Nagarjuna Sagar highway at a distance of 15KM from L B Nagar. The college is situated in a lush green location which provides aesthetic appeal and a serene environment conducive for learning.

Sri Indu College of Engineering & Technology offers B.Tech –

- 1. Civil Engineering
- 2. Mechanical Engineering
- 3. Electrical & Electronics Engineering
- 4. Electronics & Communication Engineering
- 5. Computer Science & Engineering
- 6. Information Technology
- 7. Computer Science & Information Technology
- 8. Artificial Intelligence & Data Science
- 9. CSE (Data Science)
- 10. CSE (Cyber Security)
- 11. CSE (Artificial Intelligence & Machine Learning)
- 12. CSE (Internet of Things)
- 13. M.Tech. Computer Science
- 14. M.Tech. Computer Science & Engineering
- 15. M.Tech. Embedded Systems.

2. Objectives of the Study

The main objective of the green audit energy audit is to promote the Environment & Energy Management and Conservation in the College Campus. The purpose of the audit is to identify, quantify, describe and prioritize framework of Environment Sustainability in compliance with the applicable regulations, policies and standards.

The main objectives of carrying out Green Audit are:

- ❖ To introduce and aware students to real concerns of environment and its Sustainability.
- ❖ To secure the environment and cut down the threats posed to human health by analyzing the pattern and extent of resource use of the campus.
- ❖ To establish a baseline data to assess future sustainability by avoiding theinterruptions in environment that are more difficult to handle and their corrections requiring high cost.
- ❖ To bring out a status report on environmental compliance.

The main objectives of carrying out Energy Audit are:

The primary objectives of energy audit are to identify and evaluate opportunities to reduce energy consumption per unit of product output and reduce operating costs through energy conservation and planning. Energy audit provides a "bench- mark" for managing energy in the organization and also provides the basis for planning a more effective use of energy throughout the organization.

3. Methodology

In order to perform green audit, the methodology included different tools such as preparation of questionnaire, physical inspection of the campus, observation and review of the documentation, interviewing key persons and data analysis, measurements and recommendations. The study covered the following areas to summarize the present status of environment management in the campus:

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

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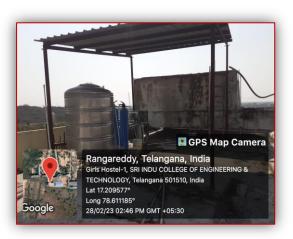
- Observation on electricity bill analysis
- Connected load list

4. Observations and Recommendations

4.1 Water Use

This indicator addresses water consumption, water sources, irrigation, storm water, appliances and fixtures. A water audit is a non-site survey and assessment to determine the water use and hence improving the efficiency of its use.







a) Observations

The study observed that the bore wells are major sources of water in college and the hostels. Water is used for drinking purpose, toilets and gardening. The waste water from the RO water purifier is used for gardening purpose. During the survey, no loss of water is observed neither by any leakages nor by overflow of water from overhead tanks. The data collected from all the departments is examined and verified. On an average the total use of water in the college is 29,000 L/day, which include

28,000 L/day for domestic, gardening purposes and 1,000 L/day for drinking purpose. Rain water harvesting units are also functional for recharging ground water level.

b) Recommendations

- In campus small scale/medium scale/ large scale reuse and recycle of water system is necessary.
- Minimize wastage of water and use of electricity during water filtration process, if used, such as RO filtration process and ensure that the equipment's used for such usage are regularly serviced.
- ❖ Ensure that all cleaning products used by college staff have a minimal detrimental impact on the environment, i.e. they are biodegradable and non-toxic, even where this exceeds the Control of Substances Hazardous to Health (COSHH) regulations.
- ❖ Gardens should be watered by using drip/sprinkler irrigation system tominimize water use.



Rain Water harvesting



Rain Water harvesting pit



Bore Well



Bore Well



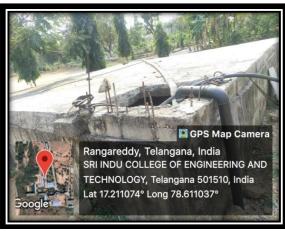
Bore Well with recharge pit



Recycling waste water through RO Plant



Recycling waste water through RO Plant



Waste Water stores in Tank and supplies through motor pump system



Waste Water stores in Tank and supplies through motor pump system

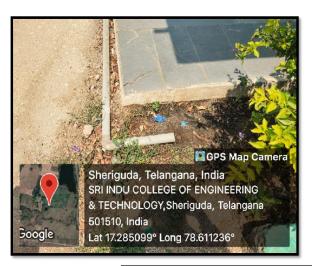


Drip irrigation system is used in campus to irrigate water for plants and trees

Waste Water Flow Connected To Gardening











4.2 Energy Use and Conservation

This indicator addresses energy consumption, energy sources, energy monitoring, lighting, appliance, natural gas and vehicles. Energy use is clearly an important aspect of campus sustainability and thus requires no explanation for its inclusion in the assessment.









a) Observations

Energy source utilized by the campus is electricity only. The entire campus including common facility centers are equipped with LED lamps and LED tube lights, except at few locations. Besides this, solar lights panel is installed in campus. Computers are set to automatic power saving mode when not in use. Also, campus administration runs switch–off drill on regular basis.

b) Recommendations

- ❖ In campus premises electricity should be shut down from main building supply after occupancy time, to prevent power loss due to eddy current.
- ❖ Support renewable and carbon-neutral electricity options on any energy purchasing consortium, with the aim of supplying all college properties with electricity that can be attributed to renewable and carbon-neutral sources.
- ❖ It is preferable to purchase electricity from a company that invests in new sources of renewable and carbon-neutral electricity.
- ❖ Installation of LED lamps instead of CFL and replacing the old tube lights with the new LED tubes.
- ❖ 5-star rated Air Conditioners, Fans and CFLs should be used.
- ❖ Cleaning of tube-lights/bulbs to be done periodically, to remove dust overit.

The Institution has facilities for alternate sources of energy and energy conservation measures

- 1. Solar energy
- 2. Biogas plant
- 3. Wheeling to the Grid
- 4. Sensor-based energy conservation
- 5. Use of LED bulbs/power efficient equipment

Solar energy

50KVA Solar energy located at College

Present day need and trend is utilizing green source of energy to reduce carbon footprint with sustainable future. In this regard Indian government is also encouraging the same with subsidies. Better late than ever, it's time to protect the nature by utilizing green energy in place of fossil fuels. In this aspect, Sri Indu College of Engineering & Technology is taking the lead to reduce carbon emissions by utilizing 70% of energy from solar.





Solar Energy panels

Solar Energy and Wheeling to the grid: Sri Indu College of Engineering & Technology uses solar technologies to diversify their energy sources, improve efficiency, and save money.

Energy developers and utilities use solar photovoltaic and concentrating solar power technologies to produce electricity on a massive scale to power in the campus.

The College Management has taken following alternative sources in conserving the energy. A-Block is equipped with solar photovoltaic to address climate change issues by reducing reliance on conventional fossil fuel based energy. With net metering connection, Solar PV System is connected to main electricity grid to allows to sell power generated by solar panels

***** WHEELING TO THE GRID

The energy output of the solar panels are utilized for the power requirements for the college and power output of the solar panel are also connected to power grid of the TSSPDCL where the excess power produced by the solar panels are supplied to the grid for which subsidy has been provided by TSSPDCL for the power consumption of the college.



Wheeling to the grid



Transformer Yard



Stand by Generator



Transformer Yard

Solar Lights

We will be using solar panel and batteries to store and then convert solar energy to electrical which is to be used for street lighting system. During day time, solar energy is stored and then depending upon natural light illumination in surrounding the array of LEDs glow using same convert solar energy. The on/off movement of LEDs depends upon input/output of sensors.





Sensor based lights

Sensor based energy conservation





Sensor based lights

*** LED LIGHTS IN CAMPUS**

Use of LED bulbs/ power efficient equipment the college management has provided following facilities in conserving the energy and power efficient equipment Master Switches for each Room to shut down power of entire room when not in use.CRT monitors are replaced with LCD/LED Monitors. The CFL fittings with higher rating wattage are replaced with LED fittings with lower wattage with the same luminous level in street Lights and other possible areas of Campus. Energy Star certified products installed in the campus are air conditioners, refrigerator, ceiling fan and others.







LED Bulb in Labs

LED Bulb in Labs

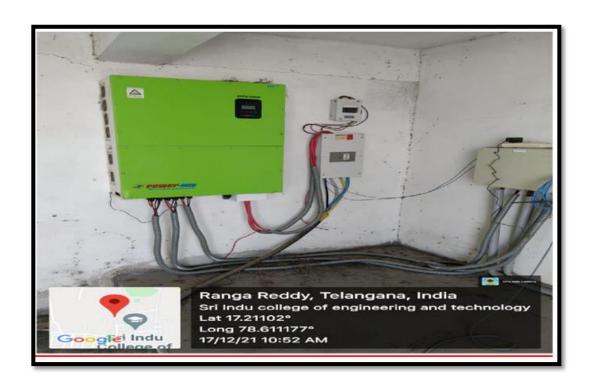






Net Metering

NET METERING CONNECTION



4.3 Waste Generation

This indicator addresses waste production and disposal of different wasteslike paper, food, plastic, biodegradable, construction, glass, dust etc. and recycling. Furthermore, solid waste often includes wasted material resources that could otherwise be channeled into better service through recycling, repair, and reuse. Solid waste generation and management is a burning issue. Unscientific handling of solid waste can create threats to everyone. The survey focused on volume, type and current management practice of solid wastegenerated in the campus.

a) Observations

Waste generation from tree droppings and lawn management is a major solid waste generated in the campus. The waste is segregated at source by providing separate dustbins for Bio-degradable and Plastic waste.

Single sided used papers reused for writing and printing in all departments and recently both side printing is carried out as per requirements. The waste generated by newspapers 400kg/year, magazine 350kg/year and of cartons is 50kg/year. Very less plastic waste (0.1Kg/day) is generated by the department, office, garden etc. but it is neither categorized at point source nor sent for recycling. Metal waste and wooden waste is stored and given to authorized scrap agents for further processing. The solid waste is collected by the municipal corporation and disposed by their methods.

b) Recommendations

- * Reduce the absolute amount of waste that is produced from college staff offices.
- ❖ Make full use of all recycling facilities provided by Municipality and private suppliers, including glass, cans, white, colored and brown paper, plastic bottles, batteries, print cartridges, cardboard and furniture.
- Provide sufficient, accessible and well-publicized collection points for recyclable waste, with responsibility for recycling clearly allocated.
- ❖ Important and confidential papers after their validity to be sent for pulping.
- ❖ Vermi composting should be adopted on at least 300 sq.ft. of land.

<u>Describe the facilities in the institution for the management of the following types of</u> degradable and non-degradable waste

Solid waste Management





Solid Waste Bin at pedestrian path



Solid Waste Bin at Corridors



Sheriguda, Telangana, India
SRI INDU COLLEGE OF ENGINEERING
8. TECHNOLOGY, Sheriguda, Telangana
501510, India
Lat 17.285099° Long 78.611236°

Solid Waste Bin at pedestrian

Path Solid Waste Bin at Ground Floor



Solid Waste Bin at Ground Floor





Solid Waste Bin at Ground Floor

DUMPING YARD









Waste dumping yard

SOLID WASTE FOR COMPOST





Liquid waste Bin at ground floor

4.4 E-Waste Generation

E-waste can be described as consumer and business electronic equipment that is near or at the end of its useful life. This makes up about 5% of all municipal solid waste worldwide but is much more hazardous than other waste because electronic components contain cadmium, lead, mercury, and Polychlorinated biphenyls (PCBs) that can damage human health and the environment.

a) Observations

E-waste generated in the campus is very less in quantity. Administration conducts the awareness programs regarding E-waste Management with the help of various departments. The E-waste and defective item from computer laboratory is being stored properly. The institution has decided to contact approved E-waste management and disposal facility in order to dispose E-wastein scientific manner.

b) Recommendations

- * Recycle or safely dispose of white goods, computers and electrical Appliances or tie up with agency.
- Use reusable resources and containers and avoid unnecessary packaging where possible.
- ❖ Always purchase recycled resources where these are both suitableand available.







E waste dumping place

4.5 Green Area

This includes the plants, greenery and sustainability of the campus to ensure that the buildings conform to green standards. This also helps in ensuring that the Environmental Policy is enacted, enforced and reviewed using various environmental awareness programs.

a) Observations

Campus is located in the vicinity of many trees (species) to maintain the bio-diversity. Various tree plantation programs are being organized at college campus and surrounding villages through NSS (National Service Scheme) unit. This program helps in encouraging eco-friendly environment which provides pure oxygen within the institute and awareness among villagers. The plantation program includes various type of indigenous species of ornamental and medicinal wild plant species.

Haritha haram program was conducted in campus.

b) Recommendations

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



Rangareddy, Telangana, India SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY, Telangana 501510, India Lat 17.211496° Long 78.611162°

Pedestrian Friendly path ways



Pedestrian Friendly path ways



Plastic Banning



Green Campus



Planting trees in program

Pollution free path ways

Hazardous chemicals and radioactive waste management





GREEN CAMPUS INITIATIVES INCLUDE

Restricted entry of automobiles:

The college encourages the staff and students to use the vehicles with pollution check stickers to reduce environmental pollution. All the vehicles of college staff/ faculty members should be getting the emission certification before entering the vehicle in college campus. All vehicles must be parked at parking area only provided at the entrance. The college encourages the employees and students to frequently use public transport, bicycles, etc. to limit the emissions.

Vendors are restricted to enter inside the college, campus using automobiles and are asked to park their vehicles in the entrance. The approach road from the main road and the roads within the campus and separate markings are made for walking of pedestrians. The path from the main gate to the academic buildings has Pedestrian friendly foot paths.





Restricted entry of vehicles into the campus by security

Use of Bicycles/ Battery powered vehicles:

Bus parking

Students and employees are motivated to use bicycle. Students and staff coming from nearby villages also prefer bicycle as a mode of transport .It is environment friendly and prevents pollution.



Use of Bicycles in campus

Pedestrian Friendly pathways:

The college has sufficient space for parking vehicles. Pedestrians can walk safely through the campus through walk friendly pathways. Roads inside the campus are well maintained. Entry of vehicles inside the campus is restricted. Security people are assigned duties on every turn and crossing to the college.







Pedestrian friendly pathways

Ban on use of Plastic:

The college is decided to maintain a plastic free campus as cleanliness is the essential part of healthy living because it is hygiene and helps us to develop our personality by keeping us clean externally and internally. So Single-use plastic items such as plastic bottles, bags, spoons, straws and cups are banned completely instead of that we are using steel glasses, plates and spoons inside the campus and awareness is created among staff and students through orientation in the premises.





Landscaping with trees and plants:

The college is engulfed with greenery and students and staff are getting an opportunity to live close to nature. Every year around 100 plants are planted in the campus through students and staff. Beautiful landscape blended with tall trees welcome all at the entrance of the college. Inside the campus, enchanting green trees beside the pedestrian pathways provide pleasure and joy to the minds. The campus houses variety of tall trees, fruit trees and plants.





Trees in-front of main block





Trees at pedestrian friendly pathways

USE OF TRANSPORT BY STAFF AND STUDENTS:

Use of transport	Total members(students and staff)
Government buses	2500
College buses	1200
Bicycle	30
Bikes	250
Cars	30
Autos	200

4.6 Electricity Bill Analysis

The following table shows the energy consumed in units from July 2022 to July 2023.

	ELEC'	TRIC	ITY	BILLS FOR	ACAI	DEMIC YEA	R 2022-23
S.No	MONTH	YEAR	KWH	AMOUNT (Rs.)	KVA	AMOUNT(Rs.)	TOTAL AMOUNT (Rs.)
1	FEB	2022	7736	60340	96	37440	97780
2	MARCH	2022	13770	107406	96	37440	144846
3	APRIL	2022	7756	140866	44/64	48121	188987
4	MAY	2022	18122	159473	120	57000	216473
5	JUNE	2022	19314	169963	96	45600	215563
6	JULY	2022	14828	130486	96	45600	176086
7	AUG	2022	12542	110369	96	45600	155969
8	SEPT	2022	12498	109982	96	45600	155582
9	OCT	2022	9272	81593	96	45600	127193
10	NOV	2022	12942	113889	96	45600	159489
11	DEC	2022	18082	159121	96	45600	204721
12	JAN	2023	13446	118324	96	45600	163924
	1	<u>I</u>	<u>I</u>		To	otal Consume Units	2006613

a) Observation on electricity bill analysis

From the above table observed that

- 1. Average monthly energy consumption of the college campus 167218 units
- 2. Total 12 months Electricity billing Amount Rs.2006613
- 3. Average unite rate is Rs. 9

4.7 Energy Audit

An energy audit is an inspection, survey and analysis of energy flows, for energy conservation in a building, processor system to reduce the amount of energy input into the system without negatively affecting the output(s). In commercial and industrial real estate, an energy audit is the first step in identifying opportunities to reduce energy expense and Carbon footprint.

a) Connected load list

- ❖ In SICET there 01 number of 250 KVA generator for 11 building load, the following blocks are
- **❖** Main Block
- R & D Block
- ❖ Ist Year Block
- Library Block
- ❖ DS Block
- Placement Cell
- Mech Block
- Girls Hostel
- **❖** Auditorium
- Sports Campus
- ❖ Mech Sheds Block

4.8 Energy saving Measurement

The following table represent the payback period for proposal load

SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY

MAIN BLOCK - CSE - IT - CSIT - IOT BLOCK

	Room Number / Area		LIG	HT			FAN			DOINTED					
SI. No.		Tube	Tube Light		eiling	Ceiling Fan	Pedestal Fan	Exhaust Fan	COMPUTER	PRINTER	UPS	A	С	PROJECTOR	OTHERS IN WATT
		18W	40W	18W	40W	50W	40W	40W	300 W	250W	In VA	1.5 Ton	2 Ton	300w	
1	EEE01	8				6									
2	EEE02	6				4									
3	EEE03	6				4			3					1	
4	Principal chamber	2		4		2	1	-	1	1			1		
5	Autonomous Annex	11		23		16	2		11				2		
6	Students service Section	2		5		3			2	2			1		
7	MB103	8				8			1					1	
8	MB104	5				3									
9	Accounts Office	8				3	1		2						
10	ECE DEPT LIBRARY	6				4			1	1					Scanne
															r-1 24W
11	Health Center	3				2									
12	Board Room			10	14	5						5		1	Tv-1
13	ECE HOD Cabin	1				1			1						
14	Corridor	8			2										
15	CSE DEPT LIBRARY	2				2			1						
16	Staffroom-1	2				2			1						
17	LH202	4				4								1	
18	LH203	4				4								1	

SI. No.	Room Number / Area	LIGHT Tube Light Fall Ceiling			Ceiling			COMPU	PRINTER	UPS	AC		PROJECTOR	OTHERS	
J 110.	room rumber / rusu	18W	40W	18W	40W	Fan 50W	Fan 40W	Fan 40W	300 W	250W	In VA	1.5 Ton	2 Ton	300w	IN WATT
19	LH204	4				4								1	
20	LH205	4				4								1	
21	LH206	4				4								1	
22	CSE Dean Cabin	4				2			1						
23	Computer LAB I	8		4		8			34		4		4	1	
24	Computer LAB II	8		4		8			33		4			1	
25	R&D LAB X11			10		4							2	1	
26	Computer LAB XII														
27	Computer LAB XI			10		4			35				2	1	
28	Computer LAB XIII			20		10			117				4	1	
29	Computer LAB VII			10		4			35				2	1	
30	Computer LAB VI			10		4			35				2	1	
31	Computer LAB V			10		4							2	1	
32	Computer LAB IV			10		4							2	1	
33	Computer LAB III	4		6		4							2	1	
34	Girls Rest Room	1				6									
35	Corridor	8		2											
36	CS(IOT) HOD Cabin	1				1			1						
37	Staff room	2				2									
38	LH310	4				4								1	
39	LH309	4				4								1	
40	LH308	4				4								1	
41	LH307	6				5									
42	MB306	4				4									
43	IT HOD Cabin	1				2	-		1						
44	Staff room	4				4	-								
45	IT Workshop	5				2	-		30				1		
46	Staff room	4				4									
47	CSE Seminar Hall	8				8							1		

	Room Number / Area	LIGHT					FAN						_		
SI. No.		Tube	Light	Fall C	eiling	Ceiling Fan	Pedestal Fan	Exhaust Fan	COMPU TER	PRINTER	UPS	A	3	PROJECTOR	OTHERS IN WATT
		18W	40W	18W	40W	50W	40W	40W	300 W	250W	In VA	1.5 Ton	2 Ton	300w	
48	Electronic Circuits Lab	6				8									
49	MB 304	4				4									
50	LH304	4				4									
51	LH303	4				4									
52	LH302	4				4									
53	LH301	4				4									
54	EEE04	6				4									
55	EEE Staff Room	2				2									
56	Corridor	8				2									
57	Computer lab VIII	4				4									
58	Staff Room1	2				2									
59	Staff Room2	2				2									
60	Staff Room3	2				2									
61	MB404	4				4									
62	LH403	4				4									
63	LH402	4				4									
64	LH401	4				4									
65	LH417	4				4									
66	Staff Room4	4	1	1		4									
67	LH416	4				4									
68	Staff Room5	2	-	1		2									
69	LH410	4	1	1		4									
70	LH411	4	1	1		4									
71	LH412	4				4									
72	LH413	4				4									
73	LH414	4				4									
74	MB415	4				2									
75	MB415A	4				2									
76	Corridor	8				2									

	PLACEMENT CELL														
		LIGHT					FAN		COMPU	PRINTER	upe				
SI. No.	Room Number / Area	Tube Light		Fall Ceiling		Ceiling Fan	Pedestal Fan	Exhaust Fan	TER	PRINTER	UPS	AC		PROJECTOR	OTHERS IN WATT
		18W	40W	18W	40W	50W	40W	40W	300 W	250W	In VA	1.5 Ton	2 Ton	300w	
1	GROUND FLOOR	153				20			3			2			
2	FIRST FLOR	115				8	1		7		1				
3	SECOND FLOOR	13				16			7						
4	L301	1				4									
5	L302	1				4			1					1	
6	L303	2				4			1					1	
7	L304	1				4									
8	L305	2				4									
9	STAFF ROOM	2				4									

	R&D BLOCK - ECE BLOCK														
			LIGH	łT			FAN		COMPU				_		
SI. No.	Room Number / Area	Tube L	.ight	Fall C	eiling	Ceiling Fan	Pedestal Fan	Exhaust Fan	TER	PRINTER	UPS	A	C	PROJECTOR	OTHERS IN WATT
		18W	40W	18W	40W	50W	40W	40W	300 W	250W	In VA	1.5 Ton	2 Ton	300w	
1	B001	4		1	1	4									
2	B002	2		1	1	2			1						
3	B003	2		-		2			1						
4	B004	4				4								1	
5	B005	4				4									
6	B006	4				4									
7	C001	4				4			30						
8	C002	4				4			30						
9	C003	8				8			1			2		1	
10	C004	4				4									
11	B101	4				4									
12	B102	2		-		2			2						
13	B103	2		-		2			1						
14	B104	4				4									
15	B105	4		1	1	4									
16	B106	4		1	1	4								1	
17	C101	4	-	1	1	4									
18	C102	4		1	1	4									
19	C103	4				4								1	
20	C104	4				4			1					1	
21	B201	4				4									
22	B202	4		1	1	4									
23	B203	4				4									
24	B204	4		1	1	4									
25	B205	4		I	-	4								1	

			LIGI	łT			FAN		СОМРИ						
SI. No.	Room Number / Area	Tube L	.ight	Fall C	eiling	Ceiling Fan	Pedestal Fan	Exhaust Fan	TER	PRINTER	UPS	A	3	PROJECTOR	OTHERS IN WATT
		18W	40W	18W	40W	50W	40W	40W	300 W	250W	In VA	1.5 Ton	2 Ton	300w	
26	C201	4				4									
27	C202	4				4								1	
28	C203	4				4									
29	C204	4				4								1	
30	C205	2				2									
31	B301	2				2									
32	B302	2				2									
33	B303	4				4									
34	B304	4				4									1
35	B305	2				2									-
36	B306	4				4									
37	C301	4				4									
38	C302	4				4									
39	C303	4				4									
40	C304	4				4									
41	C305	2				2									
															37

			LIGI	-TT			T YEAR FAN		COMPU						
SI. No.	Room Number / Area	Tube L	.ight	Fall C	eiling	Ceiling Fan	Pedestal Fan	Exhaust Fan	TER	PRINTER	UPS	A	C	PROJECTOR	OTHERS IN WATT
		18W	40W	18W	40W	50W	40W	40W	300 W	250W	In VA	1.5 Ton	2 Ton	300w	
1	F001	2				4			1					1	
2	F002	2				4			1					1	
3	STAFF ROOM	4				6			1						
4	F004	4				4			1						
5	F005	4				8			70			4		1	
6	F101	3				4			1					1	
7	F102	-				4			1					1	
8	F103	-				4			1					1	
9	F104	2				4			1					1	
10	F105	5				9			62		2			1	
11	F201	3				4								-	
12	F202	1				4			1					1	
13	F203	-				4			1					1	
14	F204	-				4			-					-	
15	F205	5				8			70					1	
16	F301	2				4			1					1	
17	F302	-				4			1					1	
18	F303	-				4			1					1	
19	F304	-				4			-					-	
20	STAFF ROOM	1				3			-					-	
21	F305	-				4			-					-	

	LIBRARY BLOCK														
SI. No.	Room Number / Area	Tube L	LIGH ight	IT Fall C	eiling	Ceiling Fan	FAN Pedestal Fan	Exhaust Fan	COMPU TER	PRINTER	UPS	A	C	PROJECTOR	OTHERS IN WATT
		18W	40W	18W	40W	50W	40W	40W	300 W	250W	In VA	1.5 Ton	2 Ton	300w	
1	GROUND FLOOR	153				20			3			2			
2	FIRST FLOR	115				8	1		7		1				
3	SECOND FLOOR	13				16			7						
4	L301	1				4									
5	L302	1				4			1					1	
6	L303	2				4			1					1	
7	L304	1				4									
8	L305	2				4									
9	STAFF ROOM	2				4									

	AI&ML,CYBERSECURITY,DATA SCIENCE BLOCK														
			LIGH	łT			FAN		COMPU				_		
SI. No.	Room Number / Area	Tube L	ight	Fall C	eiling	Ceiling Fan	Pedestal Fan	Exhaust Fan	TER	PRINTER	UPS	A	C	PROJECTOR	OTHERS IN WATT
		18W	40W	18W	40W	50W	40W	40W	300 W	250W	In VA	1.5 Ton	2 Ton	300w	
1	GF101	4				4									
2	GF102	3				2									
3	GF103	4				4									
4	GF104	2		-	-	1									
5	GF105	6				6			36	1		2			
6	GF106	9				4									
7	GF107	12				4									
8	HOD ROOM	1				1			1						
9	D101	-				3									
10	D102	2				3			1	1				1	
11	D103	2				3			1					1	
12	D104	2				2			33					1	
13	D105	6				6			36					1	
14	D106	2				4			1					1	
15	D107(LIB)	2				2			1						
16	D108	3				3			1					1	
17	D109	2				2			1					1	
18	D110	2				2									
19	STAFF ROOM	1				1			2	1					
20	D201	-				1									
21	D202&D203(DRA WING HALL	1		-	-	5									
22	D204	3				3									
23	D205(SEMINAR HALL)	6		-	1	4			1					1	
25	D206	-				4			1					1	

			LIG	-T			FAN	T = -	COMPU	DDINITED	upo		_	DDG IEGEOD	OTHERO
SI. No.	Room Number / Area	Tube L	_ight	Fall C	eiling	Ceiling Fan	Pedestal Fan	Exhaust Fan	TER	PRINTER	UPS	A	j	PROJECTOR	OTHERS IN WATT
		18W	40W	18W	40W	50W	40W	40W	300 W	250W	In VA	1.5 Ton	2 Ton	300w	
26	D207	-				4			1					1	
27	D208(STAFF ROOM)	-				4			1						
28	D209	-				3			1					1	
29	STAFF ROOM	1				2			1	1					
30	301	3				2									
31	302	4				4									
32	303	4				4									
33	304	2				2									
34	305	2				2									
35	306	-				2									
36	307	4				3									
37	308	4				3									
38	309& 310(SEMINAR HALL)	2				6			1					1	
40	STAFF ROOM					2									

						M	BA BL	OCK	•			T			1
O. N	D N 1 /4		LIGH			Ceiling	FAN Pedestal	Exhaust	COMPU	PRINTER	UPS	A	С	PROJECTOR	OTHERS
SI. No.	Room Number / Area	Tube L	ight 40W	Fall C	eiling 40W	Fan 50W	Fan 40W	Fan 40W	TER 300 W	250W	In VA	1.5 Ton	2 Ton	300w	IN WATT
1	OFFICE ROOM	3				2			2						
2	STAFF ROOM	2				2			1						
3	SEINAR HALL	5				5			1					1	
4	COMPUTER LABS	11				12			114		1			2	
5	STAFF ROOM	2				4			1						
6	101	3				4			1						
7	102	3				4									
8	103	3				4			1					1	
9	104	4				4									
10	201(STAFF ROOM)	1				2									
11	202	-				2			-						
12	203	-				4			-						
13	204	-				3			-						
14	205	-				2			-						
15	301	-				-			-						
16	COMPUTER LAB	-				-			10						
17	LIBRARY	4				7			6						

Energy saving measurement

The following tables represents the pay back period for proposal load.

Pay back calculation										
	40W FTL vs 18W LED Tube Light									
A. Saving Operation (per month analysis)										
Particular	FTL	LED								
Luminaire Type	40W	18W								
Wattage	40	18								
Total no. of Luminaire	736	736								
Working hour per day (Hrs)	8	8								
Working Day per month (Day)	25	25								
Electrical Units consumed per month (KwHr)	5,888	2,649.6								
Per Unit Electrical cost (Rs.)	8	8								
Total Electricity cost per month (Rs.)	47,104	21,196.8								
Electrical Saving w	ith use of LED (Rs.)	25,907.2								
Investment	Rs. 1,52,680/-									
Pay back in month	06 MONTHS									
Per Annum Saving	Rs. 1,55,443.2/-									

Pay back calculation 75w Existing Fan vs 50w Fan										
A. Saving Operation (per month analysis)										
Particular	Existing fan	Purposed fan								
Luminaire Type	75W	50W								
Wattage	75	50								
Total no. of Luminaire	499	499								
Working hour per day (Hrs)	8	8								
Working Day per month (Day)	25	25								
Electrical Units consumed per month (KwHr)	7,485	4,990								
Per Unit Electrical cost (Rs.)	8	8								
Total Electricity cost per month (Rs.)	59,880	39,920								
Electrical Saving with 50W Fan (Rs.)		Rs. 19,960								
		•								
Investment	Rs. 1,18,200/-									
Pay back in month	06 MONTHS									
Per Annum Saving	Rs. 1,19,760/-									

5. Conclusions

Considering the fact that the institution is predominantly a Sri Indu Institute of Engineering and Technology, there is significant environmental research both by faculty and students. The environmental awareness initiatives are substantial. The installation of solar panels and rain water harvesting system are noteworthy. Besides, environmental awareness programmes initiated by the administration shows how the campus is going green. Few recommendations are added to curb the menace of waste management using eco-friendly and scientific techniques. This may lead to the prosperous future in context of Green Campus & thus sustainable environment and community development.

As part of green audit of campus, we carried out the environmental monitoring of campus including Illumination and Ventilation of the class room. It was observed that Illumination and Ventilation is adequate considering natural light.



Figure: Ten Commandments of Sustainability

SRI INDU COLLEGE OF ENGINEERING AND TECHNOLOGY INTERNAL GREEN, ENVIRONMENENT, ENERGY & E-WASTE AUDIT

Date: 21.01.2023



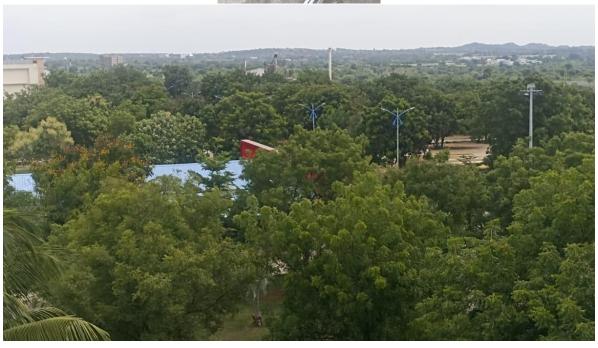


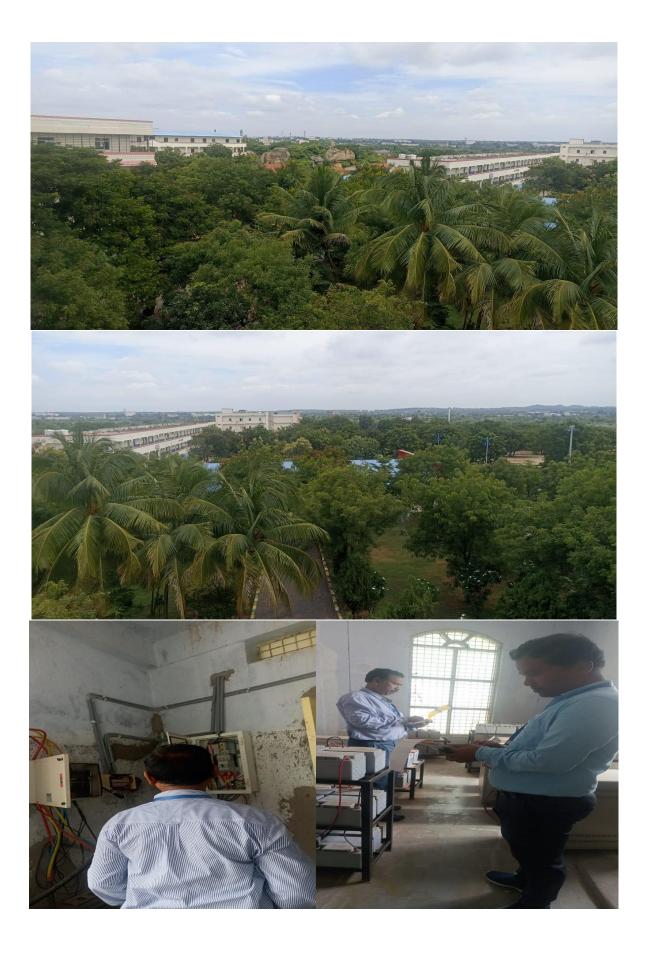










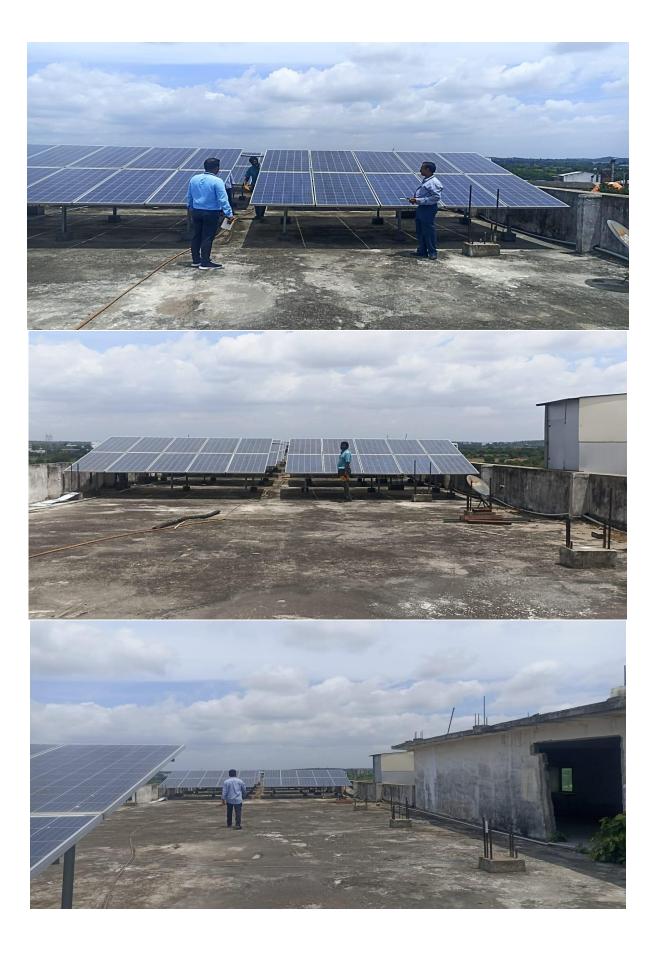


























SRI INDU COLLEGE OF ENGINEERING AND TECHNOLOGY

AWARENESS PROGRAMS

Implementing Swachh Bharath Abhiyan Scheme under Clean India Mission

Students Self Help Groups Formed and Functioning



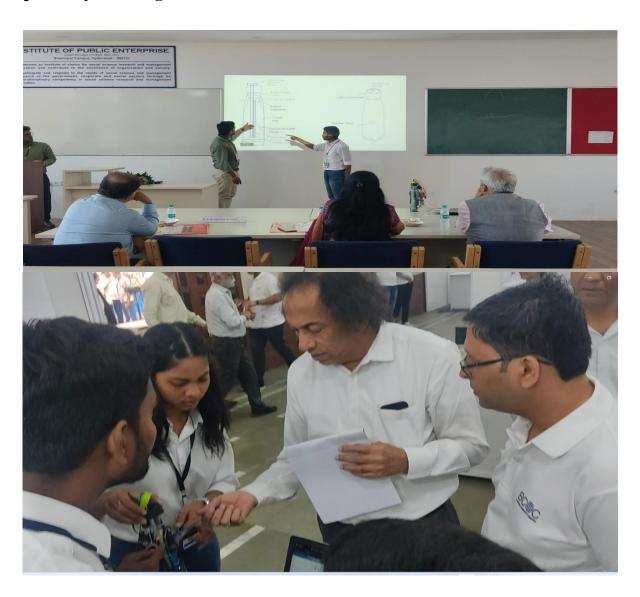


Students are organized green campus program named as Nela Talli. In this program different plants are





SPARK SESSION ON "WAY TO ORGANIC". Students presented on various topics to pave way to an organic life





Certificate



This is to certify that Sri Indu College Of Engineering & Technology, Ranga Reddy, Telangana is now a Recognized Social Entrepreneurship, Swachhta & Rural Engagement Cell (SES REC) Institution. The Institution has successfully framed the SES REC Action Plan and constituted ten working groups for improving facilities in the Campus and the Community/Adopted Villages in the areas of Sanitation & Hygiene, Waste Management, Water Management, Energy Conservation and Greenery post COVID-19, along with the observation of three environment, entrepreneurship and community engagement related days to inculcate in faculty, students and community, the practices of Mentoring, Social Responsibility, Swachhta and Care for Environment and Resources.

Date of Issue: 8/28/2020

Dr. W G Prasanna Kumar Chairman

Mahatma Gandhi National Council of Rural Education Department of Higher Education, Ministry of Education Government of India

Certificate No: MoE/SES REC/Telangana/Ranga Reddy/

World Environment Day 05.06.2023





First year Block, SRI INDU COLLEGE OF ENGINEERING & TECHNOLOGY, Telangana 501510, India

Latitude 17.21026409883052° Local 03:12:05 PM GMT 09:42:05 AM Longitude 78.61091136932373° Altitude 526 m Monday, 05.06.2023





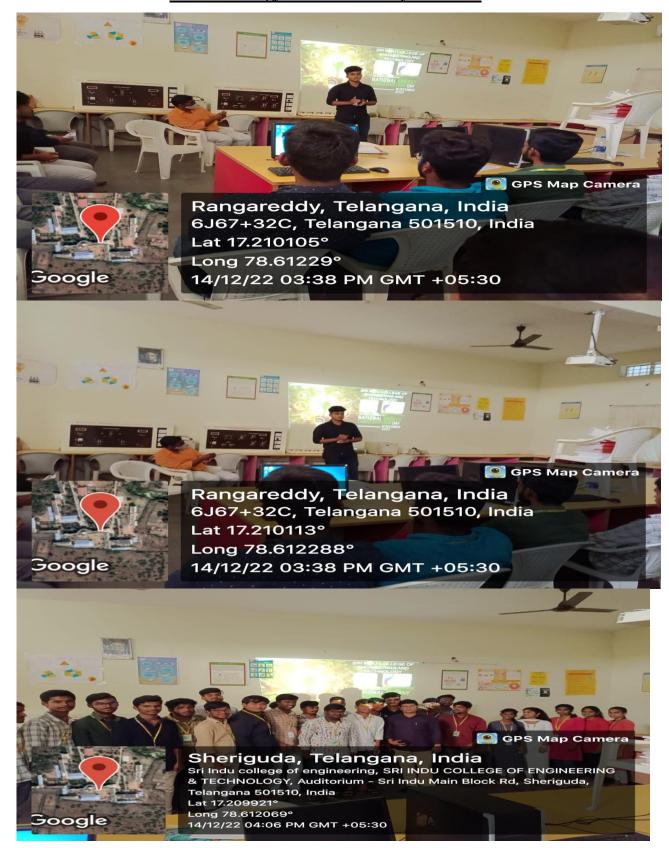








National Energy Conservation Day14.12.2022





Swachh Bharath Abhiyan Scheme under Clean India Mission











Awareness Programme conducted on Wet and Dry wastage by GHMC on 10-03-2022













Social Outreach Activities - Swachh Bharat Activities





Plantation Programme in the campus in during May 2022



Social Outreach Activities - Tree Plantation



SSHG Sales Counter established and operating in campus



Functioning Campus MGNCRE Entrepreneurship Development Cell/SES RE/VENTEL Cells







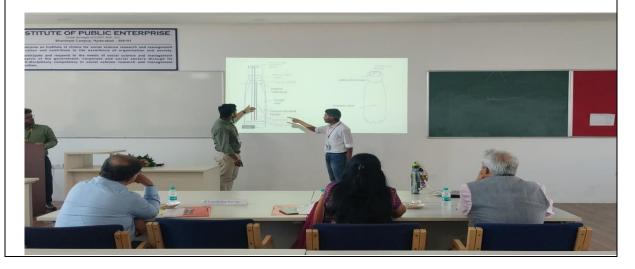
Students Self-Governed Activities on the Campus started Details:

> Students are organized green campus program named as Nela Talli. In this program different plants are





> SPARK SESSION ON "WAY TO ORGANIC". Students presented on various topics to pave way to an organic life





Day long Students Campus Bazaar organize



















Awareness on Green Campus by Department of ECE



Awareness Programme conducted on Wet and Dry wastage by GHMC on 10-03-2022

Students and employees are motivated to use bicycle. Students and staff coming from nearby villages also prefer bicycle as a mode of transport. It is environment friendly and prevents pollution.



Use of Bicycles in campus

Ban on use of Plastic:

The college is decided to maintain a plastic free campus as cleanliness is the essential part of healthy living because it is hygiene and helps us to develop our personality by keeping us clean externally and internally. So Single-use plastic items such as plastic bottles, bags, spoons, straws and cups are banned completely instead of that we are using steel glasses, plates and spoons inside the campus and awareness is created among staff and students through orientation in the premises.





Sample Students Projects:

S. No	Name of the Student s	Title of the Project	Photos		
1	Preethi Aerragin nela Dhivya Reddy Yashwa nth. A D. Harshav ardhan G. Pavani	WATER MONIT ORING SYSTE M USING IOT	The state of the s		
2	Fayaz Mani Raj Harish	UV Mask	THE AMARINES SPORGRAME THE AM		

	Swapna		COLUMN CO		
3	Mani Raj	Brainy Bottle	SI INDU COLLEGE OF CHONCERNIC & TECHNOLOGY (A) THE RESERVE OF THE PROPERTY OF		BCSC H8 INTRIAGOT NOTES PUBLICATIVE ESC.
	Dharani		BIG THE BIG IDEA		32 1030000 3
	Abhinay		SUMMIT 2.0 BC C Description 1971 And 2023 STARTUP NAME NAVEEKARAN STARTUP IDEA NAME BRAINY BOTTLE Collaborated with: 11E (RESTRICT AUGUSTALE) ADMA No. 150-2004 (1)		S PHOUGHOUS AND A STATE OF THE
	Sai Srujan		HETICS - EASARI PARUSHA RAMU Tion-Deals 1. IDIKUDA HANIRAJ 2. KASHA SI SHRUJAN 3. GUNTU HARANI 4. KONDABATHULA ABHINAY HINUERI FONTO KERTER - BRUMPA GUTAE HINUERI FONTO KERTER - BRUMPA GUTAE TUBBER TUBBER TUBBER - TO	The same of the sa	
4	Maniraj	UVC Health Monitori ng System	Pagent Notice The state of the	RTUPED	STORTUPEDIA 2. VALUE F. H. WILLIAM STORE F. H.
5	Mani Raj Vaishna vi Sai Kumar	Krushi Suraksha (Fest Controlle d IoT	PEST CONTROL OIRCUIT Charging module rechargeable batterie	in age	
	Satyanar ayana	Based Agricultu re)	LED light	# KIKI	

Haritha Haram:

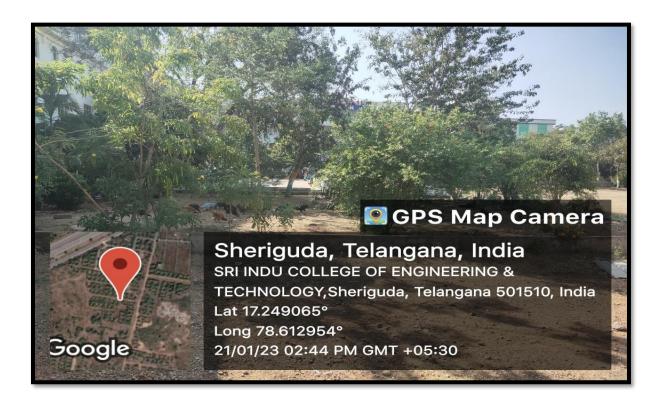








Trees in-front of main block





Trees at pedestrian friendly pathways