7.1.4: Water conservation facilities available in the Institution:

Index

S.No	Contents
1	Bills for the purchase of equipments for the facilities created under this metric.
2	Document for relevant information.
3	Green audit reports on water conservation by recognized bodies

PRINCIPAL
Sri Indu Institute of Engineering & Tech.
Sheriguda(V), Ibrahimpatnam(M),
R.R. Dist. Telangana.-501 510

INVOICE / DC

1097

V.R. AQUA CHILLERS

Plot No. 2, D.No. 3-49, Subhash Nagar Colony, Opp. Indian Oil Petrol Bunk,
Turkayamjal, Sagar Road, Ranga Reddy Dist.
Cell : 9293941667, 9966222918

Order No. : 29

Order Date : 04-09-2019

Invoice No. : 172

Invoice Date :

Customer's Name: Sri Indu Institute of Engineering and Techology

Address:

DESCRIPTION OF GOODS

S.No.	PRODUCT	Unit No.	Qty.	Unit Rate	Amount Rs.	Ps.
1)	500 ltrs LPH RO plant	1	1	80000	80000	00
	Dear sir, RO plant Installed in RVR block, kindly prepare a cheque in favor of V.R. Aqua chillers. 09/9/19					
	TOTAL				80000	00
	Deduct Advance Received					
	Net Balance Receivable				80000	00
	Total amount in words	Eighty Thousand No				
	D.C.S. No. / Cash / Cheque No.					

9/9/19

Note : Goods once sold cannot be taken back

Date : 9/9/19 Ch.no. 001472 dt: 13/09/2019 Rs. 80,000/-
1097 A/c AB. Turkayamjal.

Signature of Customer

Sales representative Name :

Venkates

For V.R. AQUA CHILLERS

आन्ध्रा बैंक Andhra Bank

TURKYAMJAL
4-105/12/1/B,SAGAR ROA
HYDERABAD -TELANGANA - 501510
RTGS/NEFT-IFS CODE : ANDB0001246

तीन महीने तक वैध / VALID FOR 3 MONTHS ONLY

दिनांक Date 06 09 2019

Pay V.R. AQUA CHILLERS -

या धारक को or Bearer

रुपये Rupees Eighty thousand only -

अदा करें ₹ 80,000/-

खा. सं. A/c No. 124611100001097

FOR SRI INDU INSTITUTE OF ENGINEERING&TECHNOLOGY

Please sign above

Payable at par at all Branches

SESHAASAI (H)/CTS - 2010

⑈001472⑈ 500011109⑆ 000231⑈ 29

Sri Indu Institute of Engineering & Technology

Approved by AICTE, New Delhi
Affiliated to JNTUH, Hyderabad.

PURCHASE ORDER

Date: - 04.09.2019

To
V R Aqua Chillers,
H.No. 3-49, Subhash Nagar,
Turka Yamjal X Roads,
Opposite Indian Oil Petrol Pump,
R R District, Hyderabad – 501510.

Kind Attn: Mr. R Venkatesh-9966222918, 9293941667.

Dear Sir,

Sub: Our Firm Order – Installation of 500Litre LPH RO Plant – 04th September, 2019.

Ref: 1. Representation Dt. 03th September, 2019.
2. Your final offer Dt. 04th September, 2019.

We are pleased herewith to issue this firm Works order on you for execution of works related to Installation 500Litre LPH RO Plant in Sri Indu Institute of Engineering & Technology, Sheriguda, Ibrahimpatnam, R.R.District. – 501510. Then contract shall be as per the following Terms & Conditions.

COST OF 500LTR LPH RO PLANT -Rs.80, 000.00
(EIGHTY THOUSANDS ONLY) INCLUSIVE OF ALL TAXES.

I. One year Warranty
II . Servicing and Checking of RO water Plant shall be performed in First week of every month.

Thanking you

Yours Faithfully,

Rcvd by
Venkatesh.
9293941667.
4/9/2019

(Dr. I. Satyanarayana)
Principal.

4/9/19

Purchase of RO water Plant —

Sri Indu Institute of Engineering & Technology

Sheriguda (Village), Ibrahimpatnam, Ranga Reddy Dist - 501 510

DEBIT VOUCHER

No.

Date : 13/9/19

DEBIT V.R. Aqua chillers

Particulars

On Account of Purchase of 500L - RO water Plant for College —

Rupees Eighty thousand only —

By Cash / Cheque / D.D. No. 001472 Dt. 13/9/19 on

Rs. 80,000/-

Prepared by: 13/9/19

Checked by 13/9/19

Receiver's Signature

9293941667

7.1.4 Water conservation facilities available in the Institution:

1. Rain Water Harvesting

Sri Indu Institute of Engineering and Technology has enabled rainwater harvesting system (RWH) in the campus. Rain water collected from roof top of the buildings, paved streets, parking lots, sidewalks is sent to storage tank. After the tank is full, the overflow water is sent to recharge pit which improves ground water level. RWH system provides sources of water and reduces dependence on the wells and other sources which is cost effective.

The rain water coming from roof tops and that flowing within the campus are collected in four numbers of percolation pits of 3m x 3m size each, constructed at all feasible points in the campus recharge ground water.

Rain Water Harvesting Pit

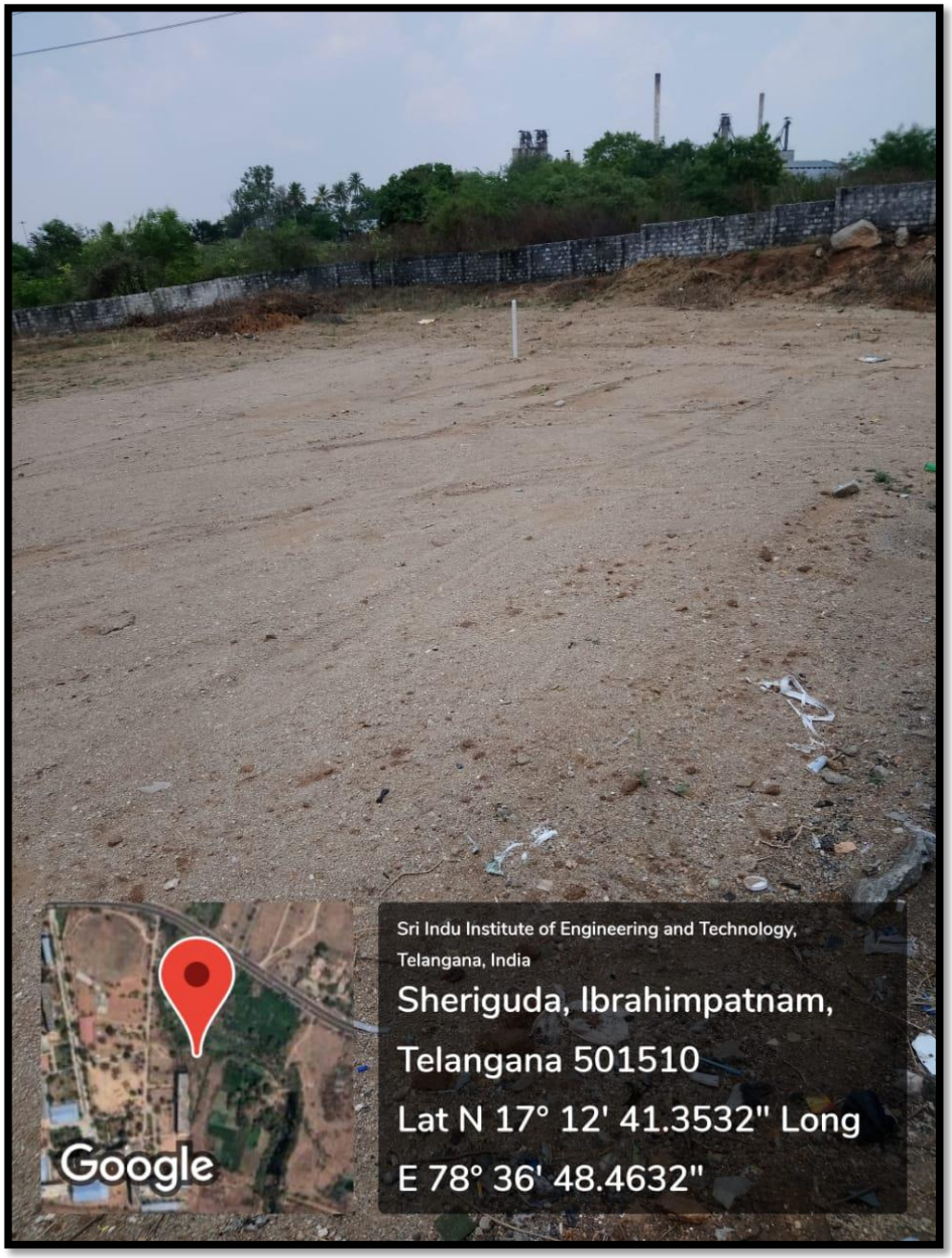
2. Borewell /Open well recharge

Our College is using the bore well waters to all the purposes which is placed near to the rain water storage pits since for making availability of water in the bore well round the year without getting dry even in the summer season.

Borewell with recharge pit

3. Construction of tanks and bunds

The water from tank is used for gardening, floor cleaning and other external uses. Flow of rainwater is stored in tank.



Tank in college

4. Waste water recycling

The institute practices separation of waste water from fresh water. Effective reuse of waste water from RO plant is being used for irrigating the green areas. Recycled water is used for flushing of toilets and watering the gardens. Our own RO purifier plant which is situated on the roof top is having 500 liters capacity. Water is stored in tanks and supplies through pump system.

Recycling waste water through RO Plant

Treated Waste water stores in tank and supplies through motor pump system

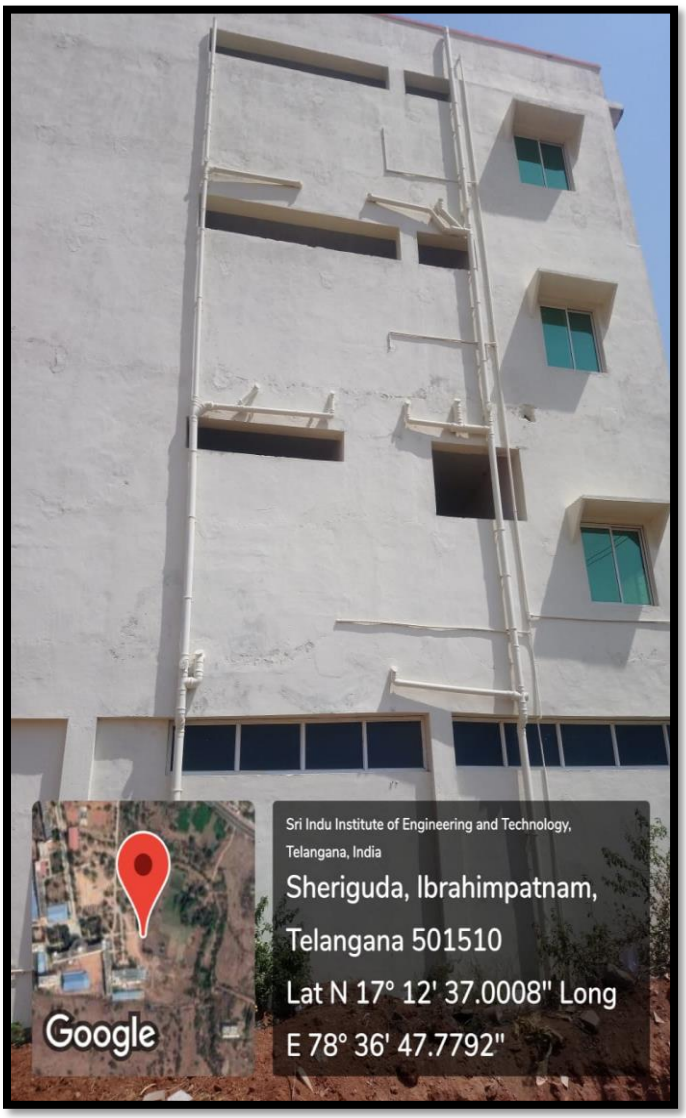
The recycled water is used to water the plants and garden. Institution also implements drip system for watering the plantation to avoid the wastage of water. All the lawns are equipped with sprinkler system to reduce water wastage and less consumption of electricity for regular watering.

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

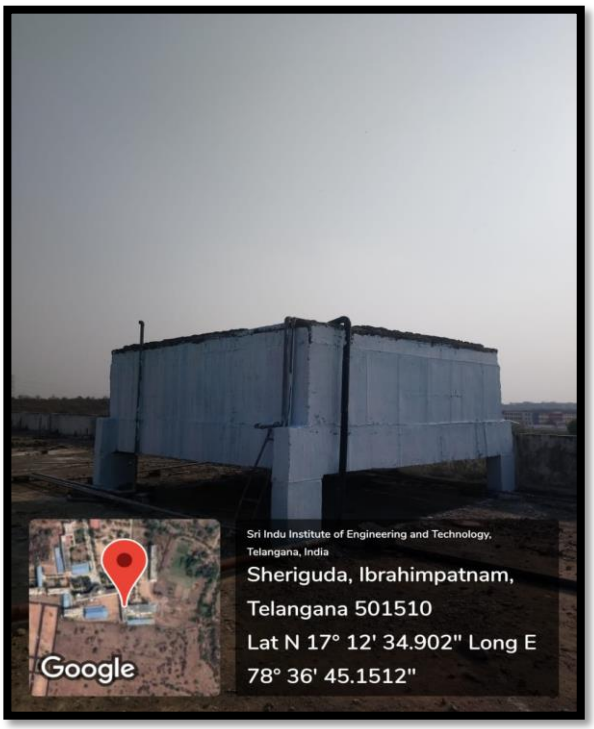
5. Maintenance of water bodies and distribution system in the campus

The ground water is pumped into storage tanks located at different places in the campus. There are six numbers of over head storage tanks in the campus. The water is distributed through well laid pipe network. Drinking water after treating in RO plant is supplied through a separate set of distribution pipes and water for all other purpose is supplied through another set of distribution pipes. Entire distribution system is well supervised by committee to ensure that there are no leakages and wastages of precious water through joints, valves etc. Waste usage of water is reduced using low pressure flushes. All the stakeholders of the college are well educated to use water economically and efficiently.

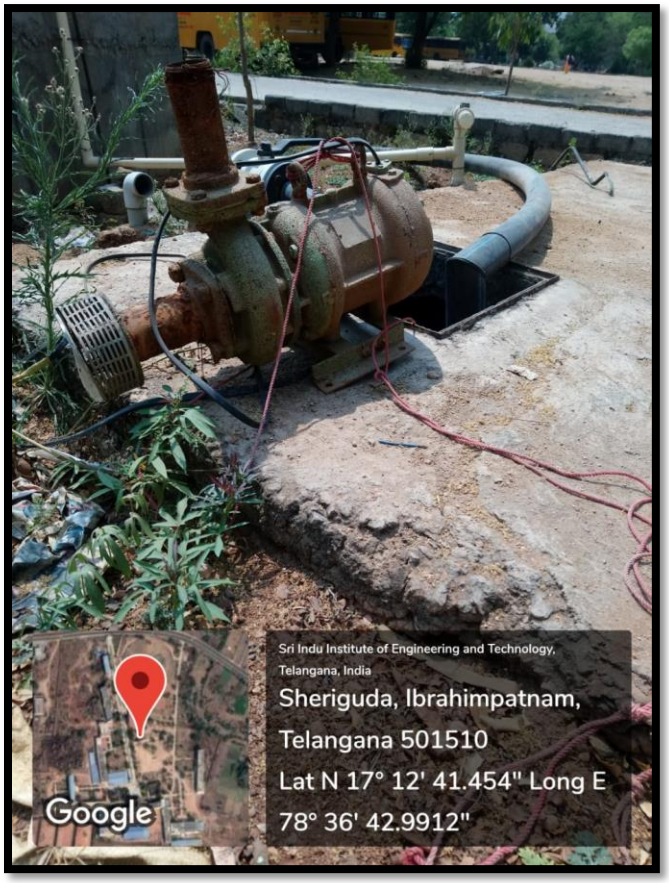
Drinking water Cooler

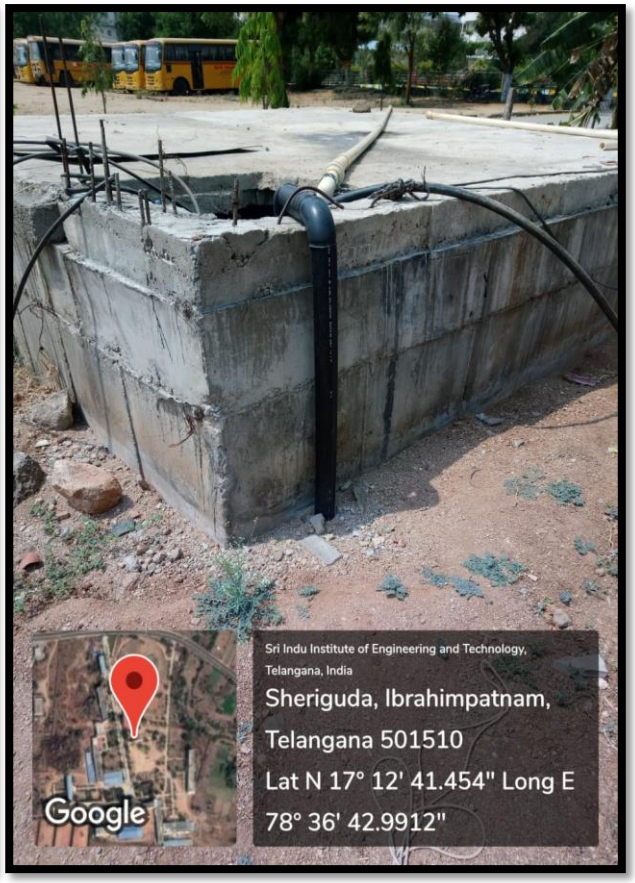


Distribution of water through pipes



Storage of water in tanks





Treated Waste water stores in tank and supplies through motor pump system

Quality Control Certification
2060, 2nd Floor, Aman Mkt, Narela, Delhi-110040
https://www.qccertification.com, info@qccertification.com

Green & Energy Audit **Date of assessment**: 10/12/2020

GREEN & ENERGY AUDIT REPORT

(2019-2020 on 18/03/2021)

Sri Indu Institute of Engineering & Technology

Main Road, Sheriguda, Ibrahimpatnam, R.R. Dist. - 501 510, Telangana. India.

Prepared By

Dr. Pardeep Kumar

Lead Auditor-QMS, EMS, OHS, ISMS, EnMS, ITMS

GREEN & ENERGY AUDIT REPORT (2019-2020)

Acknowledgement

Green Audit & Energy Audit Under ISO 14001:2015. Thanks the Sri Indu Institute of Engineering and Technology for assigning this important work of Green Audit & Energy Audit Under ISO 14001:2015. We appreciate the cooperation extended to our team during the entire process.

Our special thanks are due to:

- *Principal– Dr.I.Satyanarayana*
- *Team of colleagues*

For giving us necessary inputs to carry out this very vital exercise of Green Audit.

We are also thankful to Prof.R.Yadagiri Rao (NAAC Co-ordinator), Mr.S.Baskar(Librarian), Mr.A Vamshi and other staff members who were actively involved while collecting the data and conducting field measurements.

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a) Connected load list

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5. Conclusion

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 Institute 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 key persons and data analysis, measurements 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 framework 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	Good imitative taken by college towards use of solid waste Management System.
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.	Good initiative by college towards to implement 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- 440w Total no. of presently operated-440Nos Total no. of light fitting to be replaced=440Nos Total energy consumption =3520KWH Expected Energy Consumption=1584KWH Total energy Saved per month=1936KWH
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 in the campus=591Nos. Total no. of fans used in campus =591Nos No. of fans to be replaced=510Nos The total current consumption=7956 KWH The expected fan consumption =4080 KWH Total KWH saved per month=7956-4080=3876 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 Green Audit.

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 where energy 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.

1.1 About the College

Sri Indu Institute of Engineering and Technology was established by Global Trendset Educational Society - 2006, Vanastalipuram, Hyderabad under the chairmanship of Sri. R. Venkat Rao. Under the same management, Sri Indu College 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 41 years with an intension and commitment to impart school education and Technical education of highest quality.

The institution is located on scenic campus of 11.14 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.

SIIET offers B.Tech – CE, ME, ECE, CSE, CSE(AI&ML), CSE(CYBER SECURITY), CSE(IOT) courses.

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 the interruptions 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

In order to perform energy 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:

- Observation on electricity bill analysis
- Connected load list

4. Observations and Recommendations

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 to minimize water use.

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 over it.

Waste Generation

This indicator addresses waste production and disposal of different wastes like 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 waste generated 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 300kg/year, magazine 280kg/year and of cartons is 20kg/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.

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-waste in 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 suitable and available.

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.

Electricity Bill Analysis

The following table shows the energy consumed in units from July 2019 to July 2020.

ELECTRICITY BILLS FOR ACADEMIC YEAR 2019-20

SL.No.	MONTH	YEAR	KWH	AMOUNT(Rs.)	KVA	AMOUNT(Rs.)	TOTAL AMOUNT(Rs.)
1	JULY	2019	5720	44616	128	49920	94536
2	AUGUST	2019	7692	59997	128	49920	109917
3	SEPTEMBER	2019	3512	27393	128	49920	77313
4	OCTOBER	2019	3200	24960	128	49920	74880
5	NOVEMBER	2019	3200	24960	128	49920	74880
6	DECEMBER	2019	3200	24960	128	49920	74880
7	JANUARY	2020	3200	24960	128	49920	74880
8	FEBRUARY	2020	3200	24960	128	49920	74880
9	MARCH	2020	3200	24960	128	49920	74880
10	APRIL	2020	3200	24960	128	49920	74880
11	MAY	2020	3200	24960	128	49920	74880
12	JUNE	2020	3200	24960	128	49920	74880
13	JULY	2020	3200	24960	128	49920	74880

a) **Observation on electricity bill analysis**

From the above table observed that

- Average monthly energy consumption of the college campus 7697 units
- Total monthly billing is Rs.61582
- Average unite rate is Rs.8

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 SIIET there 01 number of 160KVA generator for 2 building load, the following blocks are

- Block-A
- Block -B
- Block –C
- Block -D

Energy saving Measurement

The following table represent the payback period for proposal load

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

BLOCK:A

S.No	ROOM NUMBER/ AREA	LIGHT				FAN			COMPUTER	PRINTER	UPS	AC		PROJECTOR	OTHERS IN WATT
		24 W	40 W	72 W	108 W	CELLING FAN 60 W	Pedestal fan	EXHUST FAN	300W	250W	in VA	1.5 TON	2 TON	300 W	
1	A001- OFFICE	4				4			4	3	1000				
2	A002	2				2			2						
3	A003	2				2			3						
4	Principal chamber	6	2			4			3	1	1000				
5	A005	6				4									
6	A006	1				1			1						
7	A007	4				4						1			
8	A008	2				2									
9	A009	2				2			2	1	1000				
10	A010	4				2			1	1					
11	A011	2				2			2	2	1000				
12	A012	1													
13	A013	1													
14	A014	6				6			30						
15	A015	6				6			30						
16	A016	8	4			8			1		1000	6		1	
17	A017	1													
18	A018	6				6			30						
19	A019	6				6			30					1	
20	CORRIDOR		4												
21	A101	4				4									
22	A102	4				4			30						

23	A103	1													
24	A104	1													
25	A105	6				4			30						
26	A106	6				4			30						
27	A107	6				4			30						
28	A108	4				4									
29	A109	4				4								1	
30	A110	2				2									
31	A111	2				2			2						
32	A112	2				2									
33	A113	4				4									
34	A114	4				4									
35	A115	4				4									
36	A116	4				4									
37	A117	4				4									
38	A118	4				4			30					1	
39	A119	4				4									
40	A120	4				4									
41	CORRIDOR	4	2												
42	A201	4				4									
43	A202	4				4									
44	A203	1													
45	A204	1													
46	A205	4				4			30						
47	A206	4				4			30						
48	A207	4				4			30					1	
49	A208	4				4									
50	A209	4				4								1	
51	A210	2				2									
52	A211	2				2									
53	A212	4				4								1	
54	A213	4				4									
55	A214	2				2									
56	Library	8	8			11			10	1					

57	Corridor	6													
58	A301	4				4								1	
59	A302	4				4									
60	A303	1													
61	A304	1													
62	A305	8				8									
63	A306	2				2									
64	A307	4				4									
65	A308	4				4								1	
66	A309	2				2									
67	A310	4				4									
68	A311	4				4								1	
69	A312	2				2									
70	A313	4				4									
71	A314	4				4									
72	A315	4				4									
73	A316	4				4									
74	A317	2				2									
75	Corridor	6													

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

S.No	ROOM NUMBER/ AREA	LIGHT				FAN			COMPUTER	PRINTER	UPS	AC		PROJECTOR	OTHERS IN WATT
		24W	40W	72W	108W	CELLING FAN 60 W	Pedestal fan	EXHUST FAN	300W	250W	in VA	1.5 TON	2 TON	300 W	
1	B001	4				4									
2	B002	2				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													
11	B101	4				4									
12	B102	2				2			2						
13	B103	2				2			1						
14	B104	4				4									
15	B105	4				4									
16	B106	4				4								1	
17	C101	4				4									
18	C102	4				4									
19	C103	4				4								1	
20	C104	4				4			1					1	
21	B201	4				4									
22	B202	4				4									
23	B203	4				4									
24	B204	4				4									
25	B205	4				4								1	

26	C201	4				4									
27	C202	4				4								1	
28	C203	4				4									
29	C204	4				4								1	
30	C205	2													
31	B301	2				2									
32	B302	2				2									
33	B303	4				4									
34	B304	4				4									
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													

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

BLOCK:D

S.No	ROOM NUMBER/ AREA	LIGHT				FAN			COMPUTER	PRINTER	UPS	AC		PROJECTOR	OTHERS IN WATT
		24W	40W	72W	108W	CELLING FAN 60 W	Pedestal fan	EXHUST FAN	300W	250W	in VA	1.5 TON	2 TON	300 W	
1	D001	4				3									
2	D002	4				3									
3	D003	4				3									
4	D004	4				3									
5	D005	4				4									
6	D006	4				4									
7	D007	4				4			30						
8	D008	4				4			30						
9	D009	4				4									
10	D010	2													
11	D011	4				4			30						
12	D012	4				4			30						
13	D013	4				4									
14	D014	4				4									
15	D015	4				4									
16	D101	1													
17	D102	1				1									
18	D103	4				4									
19	D104	4				2									
20	D105	4				4									
21	D106	4				4									
22	D107	4				4									
23	D108	4				4								1	
24	D109	4				4									
25	D110	4				4								1	
26	D111	2				4									

27	D112	4				4			30						
28	D113	4				4			30						
29	D114	4				4			30						
30	D115	4				4			30						
31	D116	4				4			2						
32	D201	1													
33	D202	1				1									
34	D203	4				4									
35	D204	4				2									
36	D205	4				4									
37	D206	4				4								1	
38	D207	4				4									
39	D208	4				4								1	
40	D209	4				4									
41	D210	4				4								1	
42	D211	2													
43	D212	2													
44	D213	4				4									
45	D214	4				4									
46	D215	4				4								1	
47	D216	4				4									
48	D301	1													
49	D302	1				1									
50	D303	4				2									
51	D304	4				4								1	
52	D305	4				4									
53	D306	4				4								1	
54	D307	4				4									
55	D308	4				4								1	
56	D309	4				4									
57	D310	4				4								1	
58	D311	2													
59	D312	2												1	
60	D313	4				4									

61	D314	4				4								1	
62	D315	4				4									
63	D316	4				4									

Energy saving measurement

The following tables represents the payback period for proposal load.

Payback 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	440	440
Working hour per day(Hrs)	8	8
Working Day per month (Day)	25	25
Electrical Units consumed per month (KwHr)	3520	1584
Per Unit Electrical cost(Rs.)	8	8
Total Electricity cost per month(Rs.)	28160	12672
Electrical Saving with use of LED(Rs.)		15488
Investment	**152680**	
Payback in month	**10 MONTH**	
Per Annum Saving	**185856**	

Payback 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	591	591
Working hour per day(Hrs)	8	8
Working Day per month (Day)	25	25
Electrical Units consumed per month (KwHr)	7956	4048
Per Unit Electrical cost(Rs.)	8	8
Total Electricity cost per month(Rs.)	63648	32640
Electrical Saving with use of LED(Rs.)		31008
Investment	**118200**	
Payback in month	**38 MONTHS**	
Per Annum Saving	**372096**	

1. 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 note worthy. 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 7-Ten Commandments of Sustainability

Date of Report Finalization: 16/12/2020

Signature valid
Digially Signed By
Dr. Pardeep Kumar
Date: 16/12/2020