



ENERGY AUDIT REPORT FOR ST. WILFRED'S COLLEGE OF LAW



Elion Technologies & Consulting Private Limited

307, 3rd Floor, DDA Lal Market, H-Block

Vikas Puri, New Delhi-110018

Contact No: +91 9013923982, +91 9013890526

Web: www.elion.co.in



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Acknowledgement

Elion Technologies and Consulting Pvt Ltd places on record it's thanks to St. Wilfred's College of Law, Shedung, Panvel for entrusting the task of conducting energy audit study.

We acknowledge with gratitude the whole hearted support and cooperation extended by all team members while carrying out the study.



Site Information

Name of College	St. Wilfred's College of Law
College Address	Near Shedung Toll Plaza, Old Mumbai Pune Highway, Shedung, Panvel-410206
Execution Partner	ELION Technologies & Consulting Pvt Ltd
Communication Address	307, 3rd Floor DDA Lal Market H-Block Vikas Puri, New Delhi-110018
Date of Audit	15 th April 2024
Year of Audit	2023 - 2024
Site Team who participated in the Study	Dr. RAJENDRA PANDITRAO MARATHE - Convener Dr. HARSHAL ASHOK PAWAR – Member Dr. MUSHTAQUE AHMAD SHAMSUDDIN SHAIKH- Member
Main Energy Consuming Machines/Equipment's considered for Energy Audit	<ul style="list-style-type: none">• Lighting & Fans• Air Conditioners• Motors & Pumps• Desktops & Printers



Executive Summary

St. Wilfred's College of Law is one of the Leading Law Colleges situated in Panvel. St. Wilfred's college of Law is committed to the advancement of knowledge and learning and is catering to become a center for excellence in legal studies. St. Wilfred's Education Society with a mission to bring out professionally competent lawyer of high caliber to suit the needs of the corporate and modern society.

St. Wilfred's College of Law aims at maintaining a high academic standard to equip the students with a profound knowledge of law and to make them think in term of achieving great heights in the realms of law. It has administrative block, academic block, moot court hall, seminar hall, computer laboratory.

Vision

Classes are directed by best teaching privilege in capacious classrooms which are well equipped for the comfort and convenience of the students.

Mission

- To nurture our intellectual capital through a perfect blend of the traditional as well as contemporary ways and means, for the comprehensive development of the society.
- To provide a conducive environment for proper harnessing latent talent of students and encourage them to take initiatives for the development of their personality.
- To sensitize learners towards inclusive social concerns, human rights, gender and environmental issues.

List of courses offered by the institute:

- BA.LLB (5 Year Course)
- Bachelor in Law [LL. B] (3 Year Course)

Electricity is supplied by Maharashtra State Electricity Distribution Co. Ltd. and for backup powers supply - DG sets is available.

Also, solar power plant of capacity 80KW is installed in the college.

The energy audit included detailed data collection, analysis of data and identification of specific energy saving proposals.



Chapter 01: Introduction

St. Wilfred's College of Law, Shedung, Panvel evinced interest in availing the services of Elion Technologies and Consulting Pvt Ltd for conducting energy audit of their premises.

Elion Technologies and Consulting Pvt Ltd team conducted the Detail Energy audit on 15th April 2024.

This report is on the energy audit carried out in St. Wilfred's College of Law, Shedung, Panvel. The detailed energy audit comprised of the following activities:

- Data collection of power consuming equipment's.
- A brief session on energy management was conducted to seek more inputs from the personnel engaged in operation and maintenance of electro mechanical services.
- Analysis of collected data.
- Discussion with the officials on the identified proposals.
- Discussion and reporting of the findings of energy audit with the Engineers and management staff.

All the identified energy savings proposals have been discussed with the executives concerned before finalizing the projects.

The contents of the report are based solely on the data provided by St. Wilfred's College of Law, Shedung, Panvel officials during the energy audit.

The management should implement the suggestions made in the report after verifying requisite safety aspects.

Methodology for Energy Audit:

The following is a list of general procedure and information undertaken during the energy audit:

- General information of the site.
- Baseline energy description.
- Past energy consumption bills which include electricity bills.
- On site data collection



- Energy analysis of different sectors.
- Recommendation of energy conservation measures.

The primary goal of the energy audit was to identify sources and areas of potential energy savings and cost saving throughout the Plant by measures of optimization, replacement, retrofitting, and on the other hand, to also provide recommendations on operational and maintenance practices improvements.



Chapter 02: Energy Consumption Details

List of equipment present in the campus:

Rating of Transformer (in KVA)	630KVA
Year of installation of the Transformer	2015
Rating of DG Set (in KVA)	-
Rating of Capacitor Bank (if present)	NA
Capacity of Solar Power Plant (if installed)	80 KW

The main areas of energy consumption as observed during the audit are as follows:

- Air Conditioners
- Lighting & Fans
- Motors & Pumps
- Desktops & Printers

The main sources of energy to meet the required consumptions are as follows:

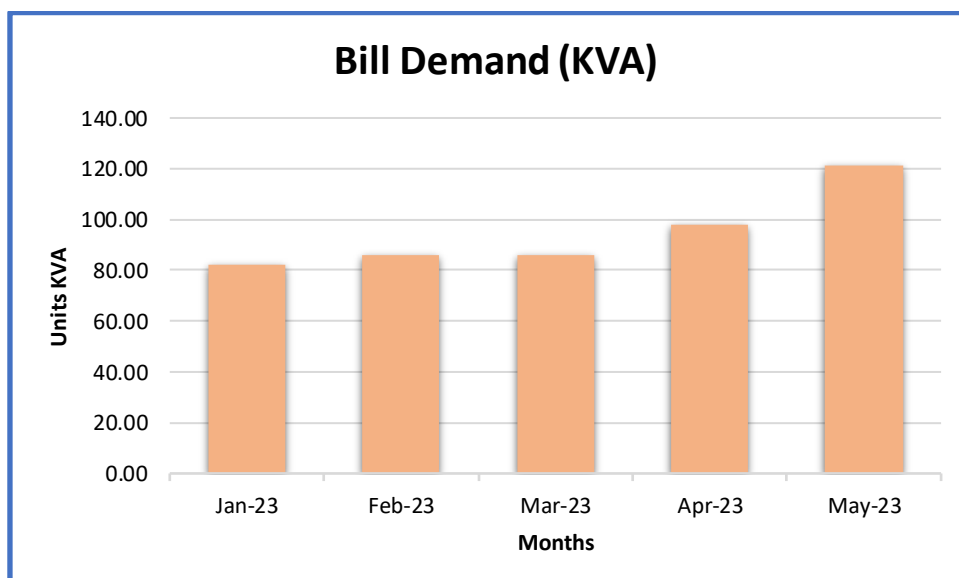
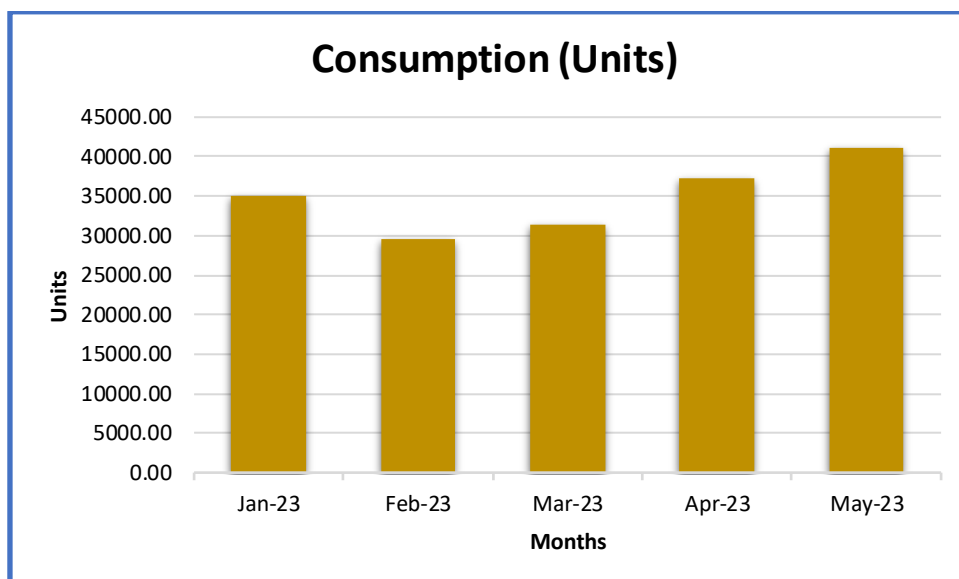
- Electricity supply from Maharashtra State Electricity Distribution Co. Ltd.
- DG sets is available.
- Solar power plant of capacity 80KW.

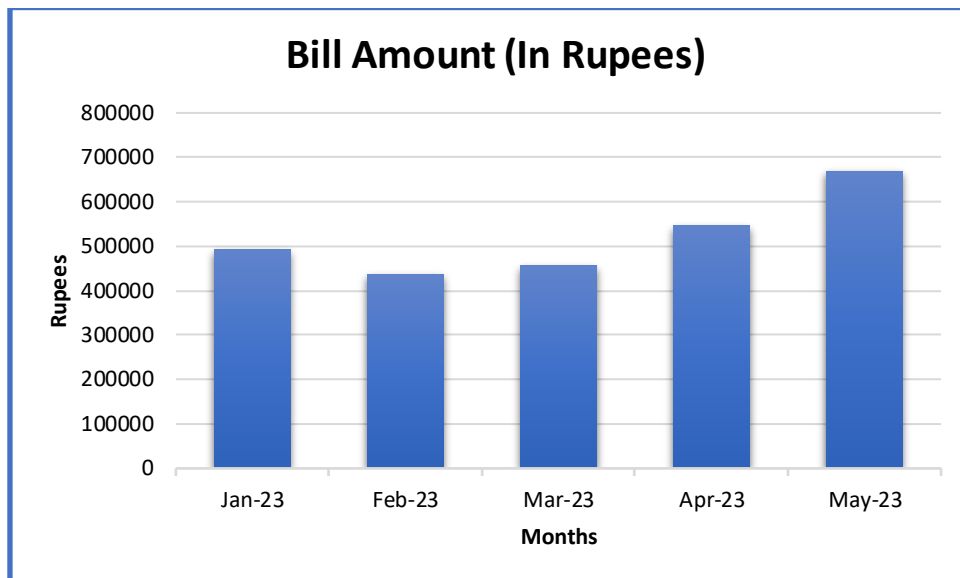


Consumption pattern for energy is given below:

Available electricity bills for the year were collected and following is the summary for energy meter.

Bill Month	Consumption (Units)	Bill Demand (KVA)	Bill Amount (In Rupees)
Jan-23	34948.00	82.00	492232.32
Feb-23	29611.00	86.00	436735.14
Mar-23	31429.00	86.00	455934.32
Apr-23	37290.00	98.00	546052.15
May-23	41147.00	121.00	668311.36







Chapter 03: Lighting System

The lighting inventory of the colleges present in the university were collected and following is the summary:

Type of lights (LED/CFL/Conventional Bulb/Tube Light)	Location	Rating	Quantity	Number of Hours being turned on
Tube Light	Ground Floor	40 W	7	7
Tube Light	Class Room - 101	40 W	4	7
Tube Light	Class Room - 102	40 W	4	7
Tube Light	Class Room - 103	40 W	4	7
Tube Light	Class Room - 104	40 W	2	7
Tube Light	Class Room - 105	40 W	4	7
Tube Light	Class Room - 106	40 W	4	7
Tube Light	Class Room - 107	40 W	4	7

Observation:

It was observed that energy efficient LED lights are installed in the campus. College management has replaced all the conventional lights with LED lights.

Recommendation:

- Occupancy sensors can be installed in cabins and spaces where continuous lighting is not required.
- Sticker to SWITCH OFF LIGHT and SAVE ENERGY to be displayed.
- Regular cleaning of light fixtures to be done to get maximum lux level.





Chapter 04: Pumps and Motors

Pump is generally used for pumping of ground water to the water tank. The details of the pumps are given below:

Name of Pump and make	Running Hours	Rated Capacity in KW	Flow Rate	Head	RPM
Kirloskar three Phase Monoblock	06 hours	10HP	-	-	1500

Name of Motor and make	Running Hours	Rated Capacity in KW	Efficiency	Ampere	RPM
Kirloskar three Phase Monoblock	06 hours	10HP	-	173.9	1500

Observation:

All pumps and motors are functioning properly and well maintained.

Recommendation:

Proper maintenance and upkeep of pump and motor to be done.



Chapter 05: Air Conditioning

Split ACs are used in facility for air conditioning. Following is the list of ACs present in the campus:

Type of AC (Windows/Split/Package and Location)	Capacity in Ton	Whether any star rating available	Set Temperature	Running Hours	Whether AC performance is satisfactory (Yes/No)
Split AC- Principal's cabin	1.5	2	24	07	Yes
Split AC Instrumentation Room	1.5	3	24	24	Yes

Observation:

- All air conditioners are found to be functioning properly and well maintained.
- Most of the air conditioners used are 3-star which is a good practice.

Recommendation:

- All doors to be kept closed while using the air conditioners and regular annual service of AC's should be carried out.
- Set Temperature of Air Conditioner shall be maintained at 26°C.
- A reduction in 1°C set point temperature, the energy cost comes down by 5%. By carefully selecting the seasonal temperature in different areas as per requirement considerable saving on account of power consumption can be achieved.
- Whenever Air Conditioners are replaced in future, BEE 5 star rated air conditioners shall be considered which are energy efficient.
- University management should consider installation of programmable microprocessor-based energy saver for air conditioners to achieve savings up to 30%.



Chapter 06: Photographic Evidence



FIGURE. TRANSFORMER INSTALLED IN 2024

Transformer



Led Lights



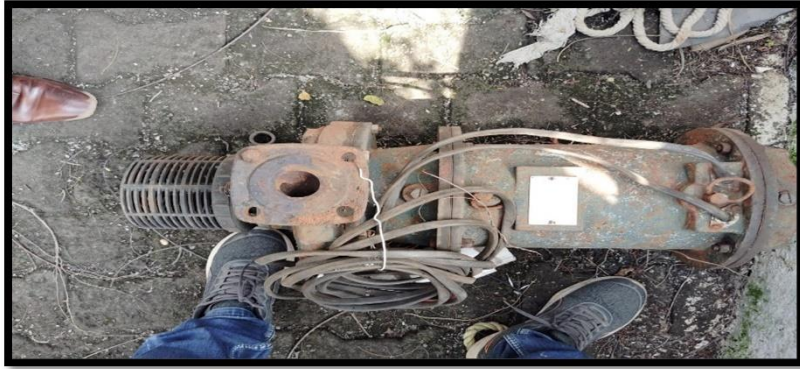
LED Lights



Split AC Indoor Unit



Borewell



Water Pump



Conclusion

The energy audit conducted at St. Wilfred's College of Law, Shedung, Panvel has revealed that college is doing good work in having sustainable college. Energy efficient LED lights are installed in the entire campus. To further reduce energy consumption, college should implement the recommendation made in report.

End of Report



Elion Technologies & Consulting Private Limited

Registered Office:

307, 3rd Floor, DDA Lal Market, H-Block

Vikaspuri, New Delhi-110018

Phone No: 011-28541888, 9013890526

Email: support@elion.co.in

Website: www.elion.co.in

DISCLAIMER

All information contained in this report is based on the data available and observations made during the audit. All recommendations made in this audit report should be duly evaluated by the management before implementation.

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