



# ENERGY AUDIT REPORT FOR SHRI MAHAVEER COLLEGE



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## Acknowledgement

Elion Technologies and Consulting Pvt Ltd places on record it's thanks to Shri Mahaveer College, Rajasthan 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

<b>Name of College</b>	Shri Mahaveer College
<b>College Address</b>	Gate no. 2, Mahaveer Marg, C-Scheme, Ashok Nagar, Jaipur, Rajasthan- 302007
<b>Execution Partner</b>	ELION Technologies & Consulting Pvt Ltd
<b>Communication Address</b>	307, 3rd Floor DDA Lal Market H-Block Vikas Puri, New Delhi, 110018
<b>Date of Audit</b>	11 <sup>th</sup> January 2023
<b>Year of Audit</b>	2023 – 2024
<b>Audit Participants from Site</b>	812
<b>Total College Area</b>	5715.19 Sqm
<b>Total Green Area</b>	1715 Sqm



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## Executive Summary

Shri Mahaveer College is a premier institute nurturing young minds to develop a global future. The College believes in imparting quality education to its students while focusing on all aspects of career development and personality enhancement.

Shri Mahaveer College has the finest and qualified faculty. Here they enhance the nature of the teacher-student relationship by actively involving in counseling, mentoring and self-improvement initiatives. The faculty members are deeply committed to develop a quality environment to create a link between academia and the corporate by sharing their knowledge and experience.

### List of courses offered by the institute:

#### Undergraduate Courses:

- Bachelor of Arts (B.A.)  
Economics, English Literature, Hindi, Geography, History, Political science, Public Administration, Psychology, Statistics, Sociology
- Bachelor of Commerce (B. Com, (P))
- Bachelor of Commerce (ABST, B. Com(H))
- Bachelor of Business Administration (BBA)
- Bachelor of Visual Arts (BVA)
- Bachelor of Computer Application (BCA)

#### Postgraduate Courses:

- M.Com (HRM)
- M.Com (EAFM)
- M.Com (ABST)

Electricity is supplied by Local Electrical Distribution Company at and is stepped down to 415V using a transformer of rating 315KVA.

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



## Chapter 01: Introduction

M/S Shri Mahaveer College, Rajasthan evinced interest in availing the services of Elion Technologies and Consulting Pvt Ltd for conducting energy audit of their premise.

Elion Technologies and Consulting Pvt Ltd team conducted the Detail Energy audit on 11<sup>th</sup> January 2023.

This report is on the energy audit carried out M/S Shri Mahaveer College, Rajasthan. 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 IIMR, Bangalore 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.



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- Past energy consumption bills which includes 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 campus 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

Following table below show the electrical utilities installed in the campus:

Rating of Transformer (in KVA)	315 KVA
Year of installation of the Transformer	2023-24
Rating of DG Set (in KVA)	
Rating of Capacitor Bank (if present)	NA
Capacity of Solar Power Plant (if installed)	NA

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 Power Distribution Company.
- Backup power from DG Set.





## Chapter 03: Lighting System

Following is the summary of lights installed at various locations of the college campus:

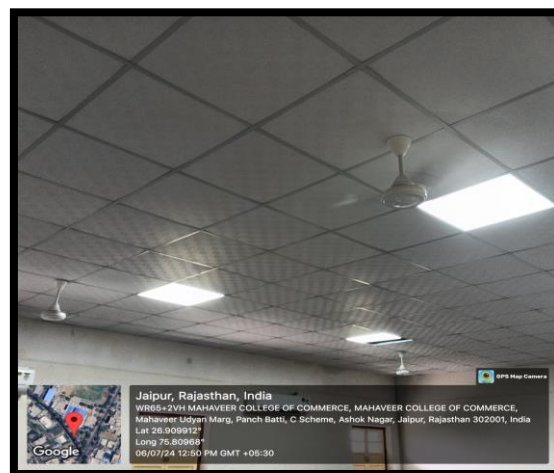
Type of lights (LED/CFL/Conventional Bulb/Tube Light)	Location	Rating	Quantity	Number of Hours being turned on
LED Tubelights/ Ceiling LED	Ground floor	10-20W	98	08
LED Bulbs/ Ceiling LED and Tubelights	1 <sup>ST</sup> Floor	10-20W	60	08
LED Bulbs/ Ceiling LED and Tubelights	2 <sup>ND</sup> Floor	10-45W	46	08
Ceiling LED/ Ceiling LED	3 <sup>rd</sup> Floor	15-45W	64	08

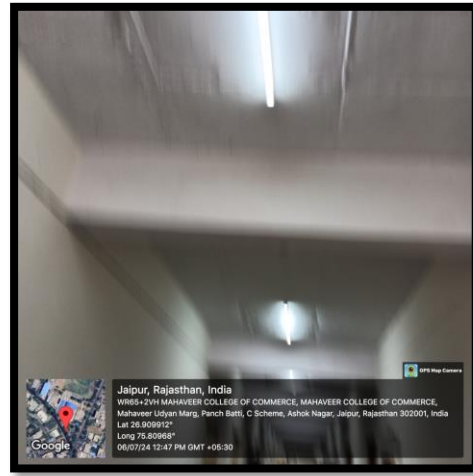
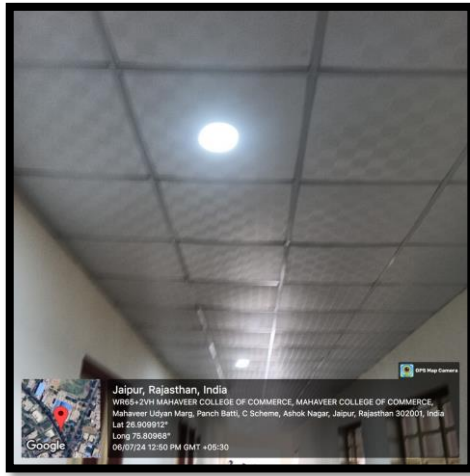
### Observation:

- Most of the lights used in the campus are LEDs. Campus has replaced all the conventional lights with energy efficient LED lights which is a good practice.

### Recommendation:

- Regular cleaning of light fixtures to be done to get maximum lux level.
- Stickers emphasizing "Save Electricity" or "Switch Off" shall be displayed near sockets or switches.





LED Lights



## Chapter 04: Air Conditioning

Split, and Ductable Air Conditioners 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)		No. of Unit	Capacity in Ton	Whether any star rating available	Set Temperature	Running Hours	Whether AC performance is satisfactory (Yes/No)
Ground Floor	Split AC	3	1.5	4	24	8	Yes
	Centralized AC	1	28	NA	24	8	Yes
First Floor	Split AC	6	2	3.5	24	8	Yes
	Centralized AC	1	28	NA	24	8	Yes
Second Floor	Split AC	16	2	4	24	8	Yes
Third Floor	Split AC	28	2	4	24	8	Yes

### Observation:

- All air conditioners are found to be functioning properly and well maintained.
- Regular servicing and maintenance of air conditioners are done with proper cleaning.

### 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.

- Installation of AC energy savers can be considered for air conditioners having longer running hours.





## Chapter 05: Pumps and Motors

Name of Pump and make	Running Hours	Any VFD	Rated Capacity in KW	Flow Rate	Head	RPM
Texmo	5 hrs	-	7 HP	-	-	1440
Taxmo	5 hrs		7 HP			1440

Name of Motor and make	Running Hours	Any VFD	Rated Capacity in W	Efficiency	Ampere	RPM
Kirloskar Three phase Mono block	5 hrs	-	125 W	-	-	-
Sudhir	5 hrs	-	250 W	-	-	-

### Observation:

- These pumps are strategically placed to ensure efficient water distribution and management throughout the Campus. All pumps and motors are functioning properly and well maintained.

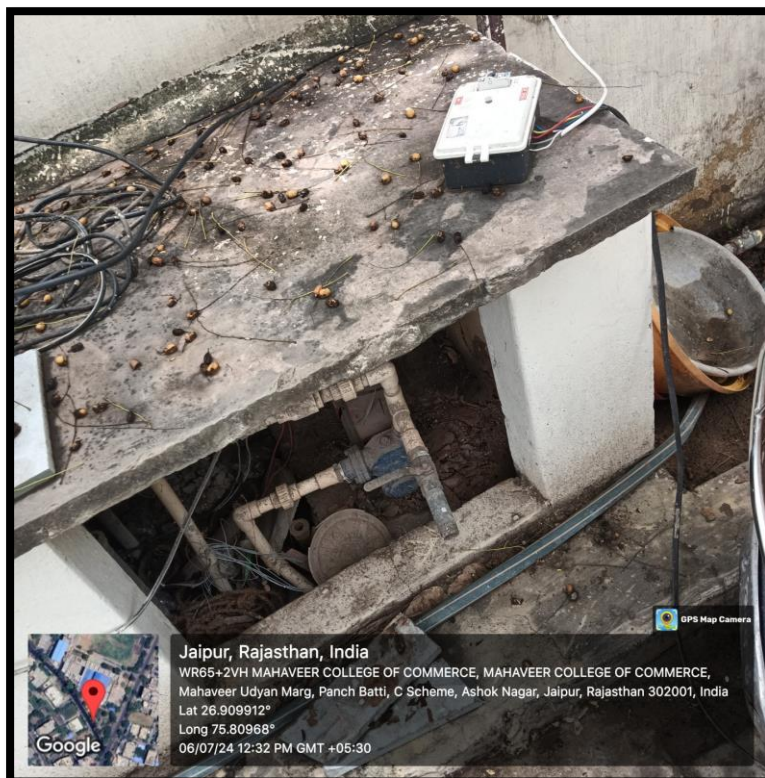
### Recommendation:

- Proper maintenance and upkeep of pumps and motors to be done.



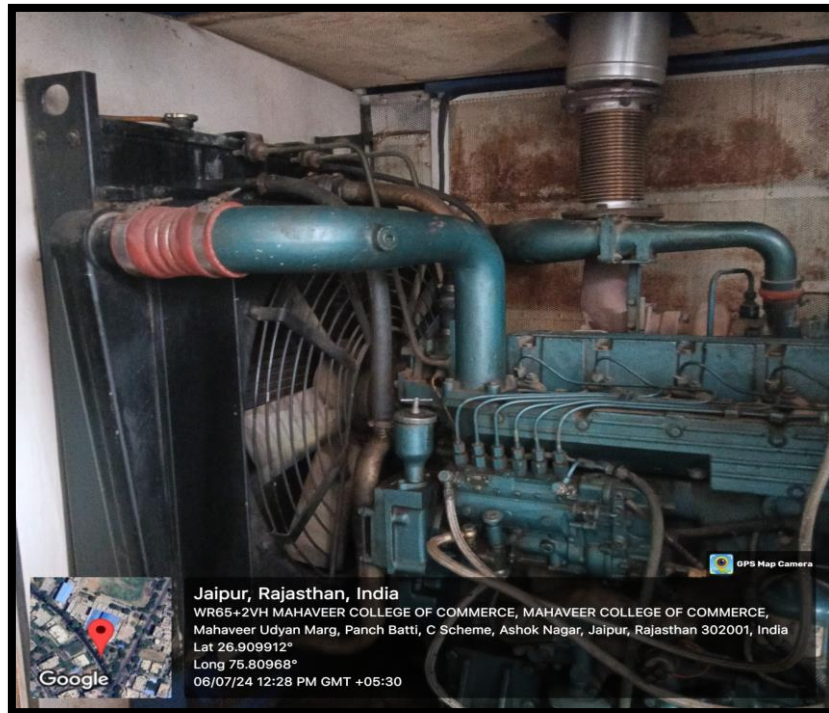
## Photographic Evidence

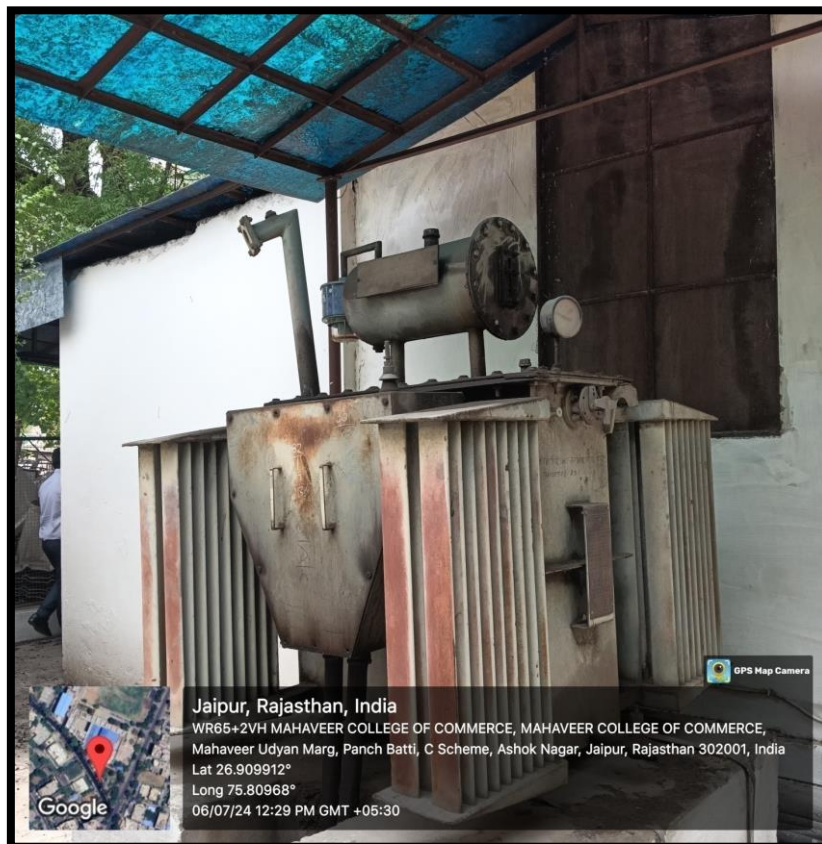
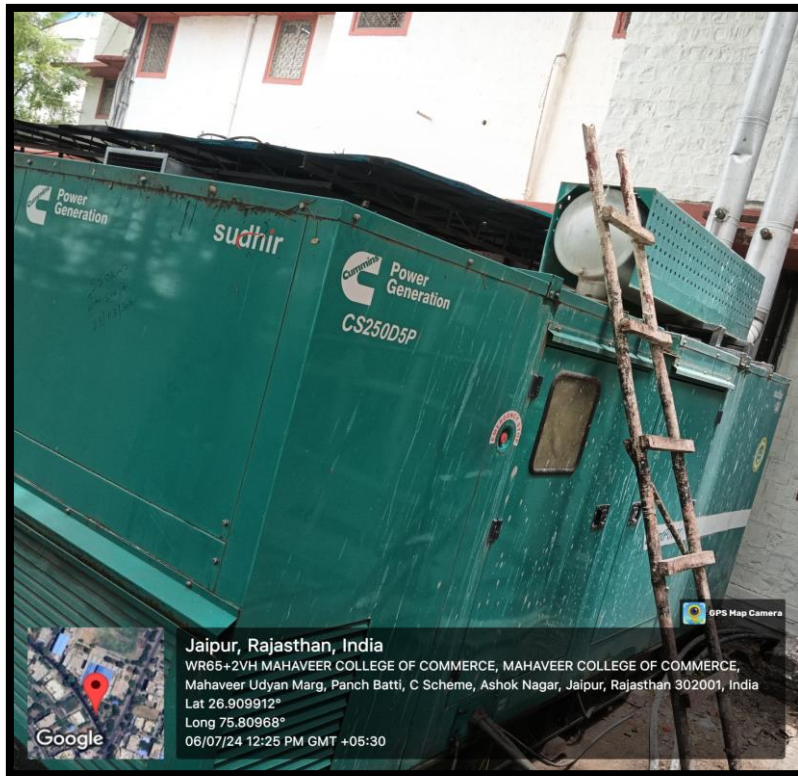














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## Conclusion

The energy audit performed at Baba Education Society Institute showcased commendable efforts towards sustainability within the college. The replacement of conventional lights with energy-efficient LED alternatives marks a significant stride in reducing energy consumption.

Despite these advancements, there remains untapped potential for further enhancing energy efficiency. The audit report likely contains specific recommendations aimed at maximizing sustainability efforts. Implementing these suggestions could significantly bolster the college's energy-saving initiatives, continuing the positive trajectory towards a more environmentally conscious campus.

**End of Report**



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### **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.

Elion Technologies and Consulting is not liable for any damages incurred by the organization through implementation of the energy saving proposals either to it or to any third party getting impacted by the implementation of this report.

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