

ENERGY AUDIT

STUDY PERIOD (ONE YEAR) 2025-2026

Sustainability study

AUDIT REPORT

Studied for

Children Welfare Centre's

Clara's College of Commerce

Yari Road, Versova, Andheri West - 400061

Studied in the capacity of

Accredited and Certified

Green Building Professional



Studied by

Email: greenviosolutions@gmail.com

Disclaimer

The Audit Team has prepared this report for **Children Welfare Centre's Clara's College of Commerce** located at Yari Road, Versova, Andheri West - 400061 based on input data submitted by the Institute analysed by the team to the best of their abilities.

The details have been consolidated and thoroughly studied as per the various guidelines for Green Buildings available in National and International Standards; the report has been generated based on comparative analysis of the existing facilities and the prerequisites formulated by various standards. The inputs derived are a result of the inspection and research. These will further enhance and develop a Healthy and Sustainable Institution.

These can be implemented phase wise or as a whole depending on the decision taken by the internal team. The warranty or undertaking, expressed or implied is made and no responsibility is accepted by Audit Team in this report or for any direct or consequential loss arising from any use of the information, statements or forecasts in the report.

The audit is a thorough study based on the inspection and investigation of data collected over a period of time and should not be used for any legal action. This is the property of Greenvio Solutions and should not be copied or regenerated in any form.

The Report is prepared by the Team of Greenvio Solutions under their brand and department – Sustainable Academe as Consultancy firm with the Project Head - Ar. Nahida Shaikh who is as an Accredited and Certified Green Building Professional-Architect. Green Building consultancy is her forte and she is one of the most sought-after names when it comes to providing excellent quality services within the stipulated time frame.

The Study is conducted in capacity of Accredited & Certified Green Building Professional with extensive experience.


Ar. Nahida Abdulla

Greenvio Solutions

Developing Healthy and Sustainable Environments

We are an Environmental and Architectural Design Consultancy firm

Sustainable Academe is our department for conducting audits

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Acknowledgement

The Audit Assessment Team extends its appreciation to **Children Welfare Centre's Clara's College of Commerce, Maharashtra** for assigning this important work of Energy Audit. We appreciate the cooperation extended to our team during the entire process.

Our special thanks are extended are due to everyone from the Management.

We are also thankful to Institute's Task force who have played a major role in data collection.

Sustainable Academe

Brand of Greenvio Solutions, Palghar District, Maharashtra- 401208

RENEWAL REPORT

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1. Introduction

1.1 About the Institution

1.1.1 Vision

Proposes "To provide value based education with new innovations and ideas, so that our pupils grow into aesthetically rich, intellectually aware and integrated young people, capable of fulfilling their dreams and aspirations.."

1.1.2 Mission

Adheres and focuses "To instil qualities of leadership, ethics, values of good citizenship and above all of a good human being through modern & traditional education."

2. Overview

2.1 Summarised Populace analysis for 2025-26

2.1.1 Students data

The data (shared by Institute) shows there were 434 students.

2.1.2 Staff data

Above data documents 24 staff members.

Thus, total populace stands at 458 nos.

3. Observation

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Evidence documents for Site visit of external audit team


Audit team headed by external expert - Ar. Nahida Abdulla
Accredited & Certified Green Building Professional, ISO IA (IMS)
Audit objective: Green Building up gradation of the premises

Audits covered: Green audit Energy audit Environment audit


Institute: CWC CLARA'S COLLEGE OF COMMERCE Date: 21/01/2026


Document objective: Inferences of the Site visit

Observations (Positive aspects)	Suggestions (Improvement aspects)
Green Audit	
- Cleanliness & hygiene well maintained	- Mention details about latest water testing near water cooler area
Energy Audit	
- Innumerable 'Fire fighting measures' undertaken	- Continue with the measures
Environment Audit	
- Potted plants have been placed on rooftop	- Install CO ₂ monitor within premises




Signature & round seal
Name: Dr. Madhukar Gite
Designation: **Principal**
For **CLARA'S COLLEGE OF COMMERCE**
Yari Road, Versova,
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Signature & round seal
Name: Mrs. F. A. Shaikh
Designation: **Project Coordinator**
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Scanned with OKEN Scanner

Plate 1: Evidence files related to inferences

Evidence documents for Site visit of external audit team

Audit team headed by external expert - Ar. Nahida Abdulla
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Institute: CWC CLARAS COLLEGE OF COMMERCE Date: 21/01/2026

Document objective: Proof of the Site visit



Meeting with the core team

Investigation of the systems

Signature & Round seal:
 Name: Dr. Madhukar Gite
 Designation: **Principal**
 For **CLARAS COLLEGE OF COMMERCE**
 Yari Road, Versova,
 Andheri (W), Mumbai-400 061



Signature & Round seal:
 Name: Mrs. A. Shaikh
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Plate 2: Evidence files related to details

Evidence documents for Site visit of external audit team

Audit team headed by external expert - Ar. Nahida Abdulla
 Accredited & Certified Green Building Professional, ISO IA (IMS)
 Audit objective: Green Building up gradation of the premises

Audits covered: Green audit Energy audit Environment audit

Institute: CWC CLARA'S COLLEGE OF COMMERCE Date: 21/01/2026

Document objective: Induction Meeting attendance sheet

S. No.	Name	Committee	Designation	Signature
1.	Mrs. F. A. Shaikh	External	Project Coordinator	
2.	Ar. Nahida Abdulla	External	Project Head	
3.	DR. MADHUKAR GITTE	INTERNAL	PRINCIPAL	
4.	Mr. Pravin Deshmukh	Internal	Librarian	
5.	Dr Babita Kanojia	Internal	ICRAE	
6.	Mr. Rakesh S. Sigh	Internal	BMP coordinator	

Signature & round seal
 Name: Dr. Madhukar Gitte
 Designation: **Principal**
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Plate 3: Evidence files related to induction

Evidence documents for Site visit of external audit team

Audit team headed by external expert - Ar. Nahida Abdulla
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Audits covered: Green audit Energy audit Environment audit

Institute: CWC CLARA'S COLLEGE OF COMMERCE Date: 21/01/2026

Document objective: Exit Meeting attendance sheet

S. No.	Name	Committee	Designation	Signature
1.	Mrs. F. A. Shaikh	External	Project Coordinator	
2.	Ar. Nahida Abdulla	External	Project Head	
3.	DR. MADHUKAR GITTE	INTERNAL	PRINCIPAL	
4.	Mr. Aravin Deshmukh	Internal	librarian	
5.	Dr Babita Kanjia	Internal	I Q A C .	
6.	Mr. Ruteesh R. Singh	Internal	Bmi-Coordinator	

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Plate 4: Evidence files related to exit meeting

4. Investigation

The following results were carried out during visit on **21 January 2026**.

The micro-climate temperatures of the site depends upon various factor including through evapotranspiration, trees and other vegetation cool the air around them. (Reference and further edited with details from dnr.louisiana.gov)

The base temperature for thermal comfort in India is 24°C (75°F) – Reference study [https://www.researchgate.net/post/What_is_the_base_temperature_for_thermal_comfort_in_India#:~:text=The%20base%20temperature%20for%20thermal%20comfort%20in%20India%20is,C%20\(75%C2%B0F\).](https://www.researchgate.net/post/What_is_the_base_temperature_for_thermal_comfort_in_India#:~:text=The%20base%20temperature%20for%20thermal%20comfort%20in%20India%20is,C%20(75%C2%B0F).)

The following results about 'Micro-climate temperature' based on investigation carried out.

S. No.	Space	Result (°C)	Required (°C)	Improvement required
1.	Main block @ 1316	24	24	NO

Table 1: Results for the micro-climate temperature study

No changes are required.

5. Documentation

Section 1 - Fire and Life safety

5.1 Facilities study

The following provisions are available.

- Fire extinguishers
- Fire hose reel
- Fire pump

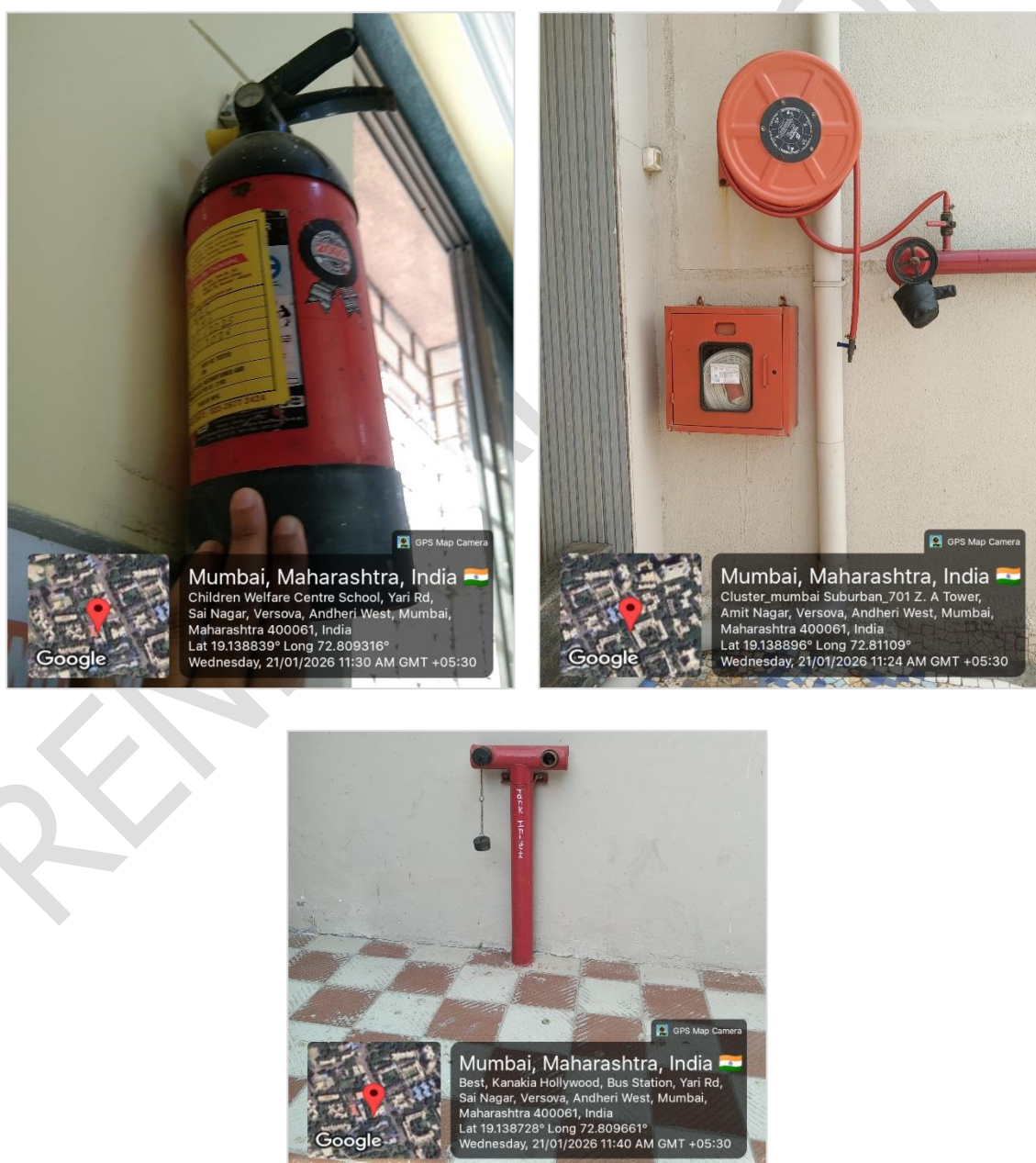


Plate 5: Facilities related to fire and life safety measures

Section 2 - Energy generation & expense incurred

5.2 Load distribution study

5.2.1 Categorization

The campus has EDUCATIONAL' facility; Thus, the type of load can be stated as 'COMMERCIAL'

5.2.2 Primary sources of energy consumption

- **Electrical (Metered)** – Light, Fans, Equipment, Pumps comprise these sources.
- **Alternate sources of energy consumption** – Not available.

5.2.3 Secondary sources of energy consumption

The sources were not informed.

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5.3 Technical payload study

S. No.	Month	Year	Amount	(A) Total units consumed	(B) Solar units generated	(C = A-B) Gross units consumed after deduction
1	June	2025	1,96,842.11	18,608	0	18,608
2	July	2025	2,38,113.40	23,602	0	23,602
3	August	2025	1,84,449.25	17,321	0	17,321
4	September	2025	2,26,497.68	20,054	0	20,054
5	October	2025	1,95,176.60	17,724	0	17,724
6	November	2025	2,07,045.41	19,020	0	19,020
7	December	2025	1,77,981.61	17,256	0	17,256

Table 2: Solar and other unit information

5.3.6 The observation related to above information states:

- ⇒ The **total amount** spent was **Rs. 14,26,106.06/-**
- ⇒ **Total units** consumed was **1,33,585 kWh (Only Electrical)**
- ⇒ **Alternate source of energy is NOT available.**
- ⇒ **The average study is done on basis of information of June 2025 to November 2025 thus it can be stated that Percentage of energy met by alternate Renewable source is ZERO**

Section 3 – Energy consumption

5.4 Calculated electrical consumption study

(Energy consumption by the electrical appliances study)

The following documentation is based on the consumption practice on a regular working day.

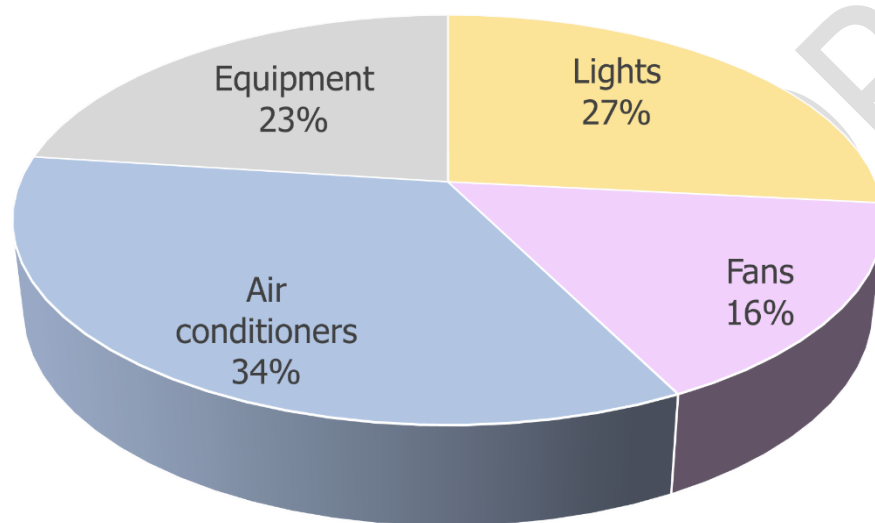


Figure 1: Summary of the calculated electrical consumption as per inventory

The above graph shows that air conditioners consume 34% whereas the lights consume 27% while the equipment consume 23% and the fans consume 16% of total calculated electrical energy.

5.5 Lights

5.5.1 Types of lights based on the numbers

There are **784 lights on the premises**; the following table shows the various types of lights on the premises.

S. No.	Type	Nos.
1	LED lights <i>(Energy efficient appliance)</i>	576
2	Non-LED <i>(Non-Energy efficient appliance)</i>	208

Table 3: Summary of the types of lights on-premise

5.5.2 Types of lights based on the power consumption

The energy consumption of lights is **40,174 kWh** of energy.

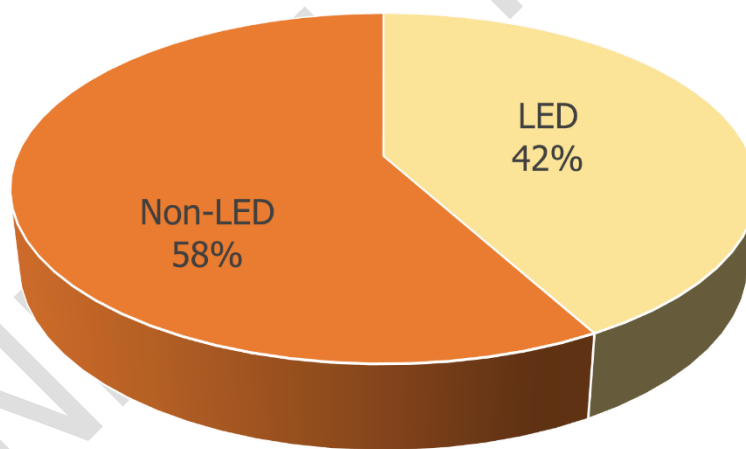


Figure 2: Energy consumed by types of lights in the premise based on the usage study

The analysis of the types of Lights on-premises shows **Non-LED lights consume 58%** whereas the **LED consume 42%** of the total power consumed by lights.

5.6 Air conditioners

5.6.1 Types of air conditioners based on the numbers

There are **40 air conditioners** on the entire premises.

5.6.2 Building-wise consumption analysis

The energy consumption of air conditioners is **51,913 kWh** of energy.

5.7 Fans

5.7.1 Types of fans based on the numbers

There are **237 fans** on the premises as follows:

S. No.	Type	Nos.
1	Wall mounted fans	01
2	Ceiling fans (Regular)	236

Table 4: Summary of the types of fans in the premises

5.7.2 Types of fans based on the power consumption

The energy consumption of fans is **24,016 kWh** of the energy.

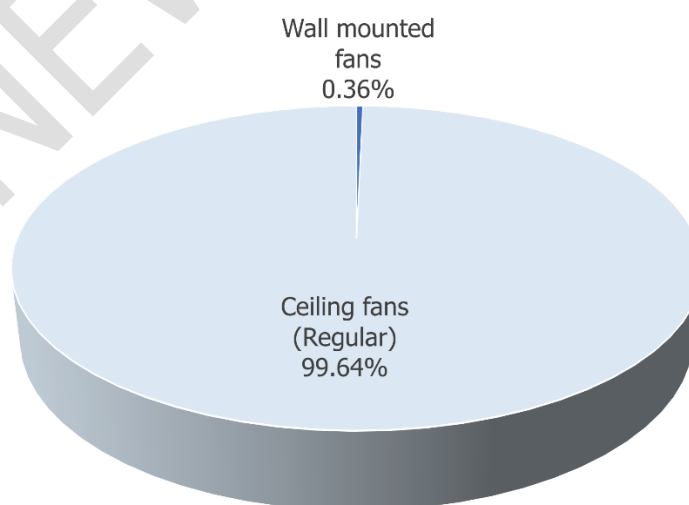


Figure 3: Types of fans based on power consumption

The above analysis shows **Ceiling fans (Regular) consume 99.64%** while the **wall mounted fans consume 0.36%** of total power consumed by fans.

5.8 Equipment

Only two major appliances information was shared and considered.

5.8.1 Types of Equipment

There are **46 nos. of equipment** in the premises.

5.8.2 Types of equipment as per their energy contribution

The energy consumption of equipment is **34,558 kWh** of energy.

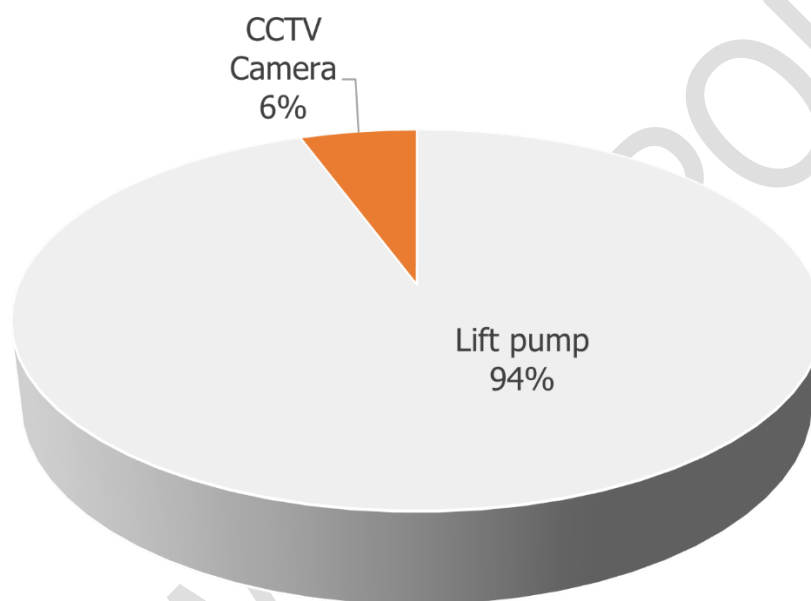


Figure 4: Energy consumed by types of equipment in the educational sector based on the usage study

The above summary shows that **Lift pump consumes more energy at 94%** while the **CCTV camera consumes 6%** these are major consumers as compared to other equipment.

5.9 Comparison study

A. Detailed study

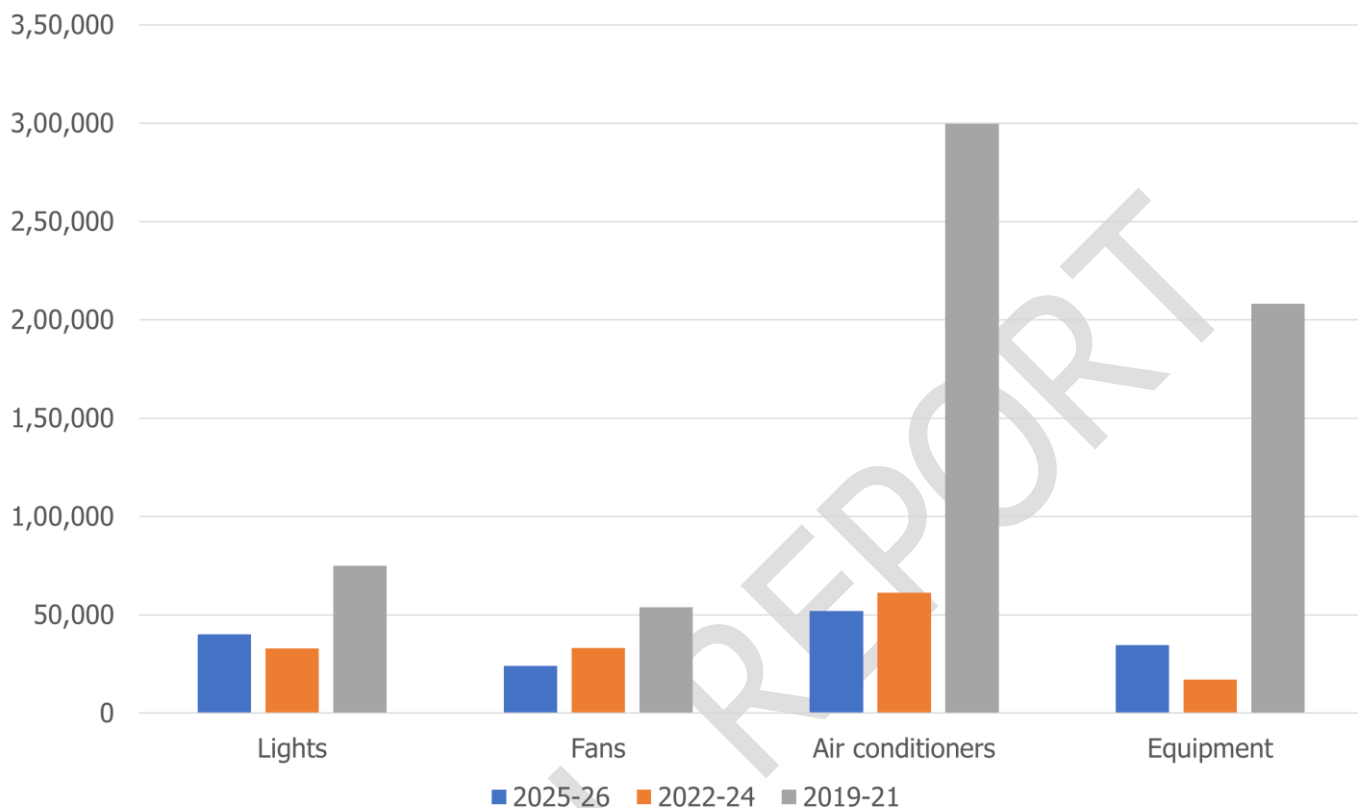


Figure 5: Detailed comparison

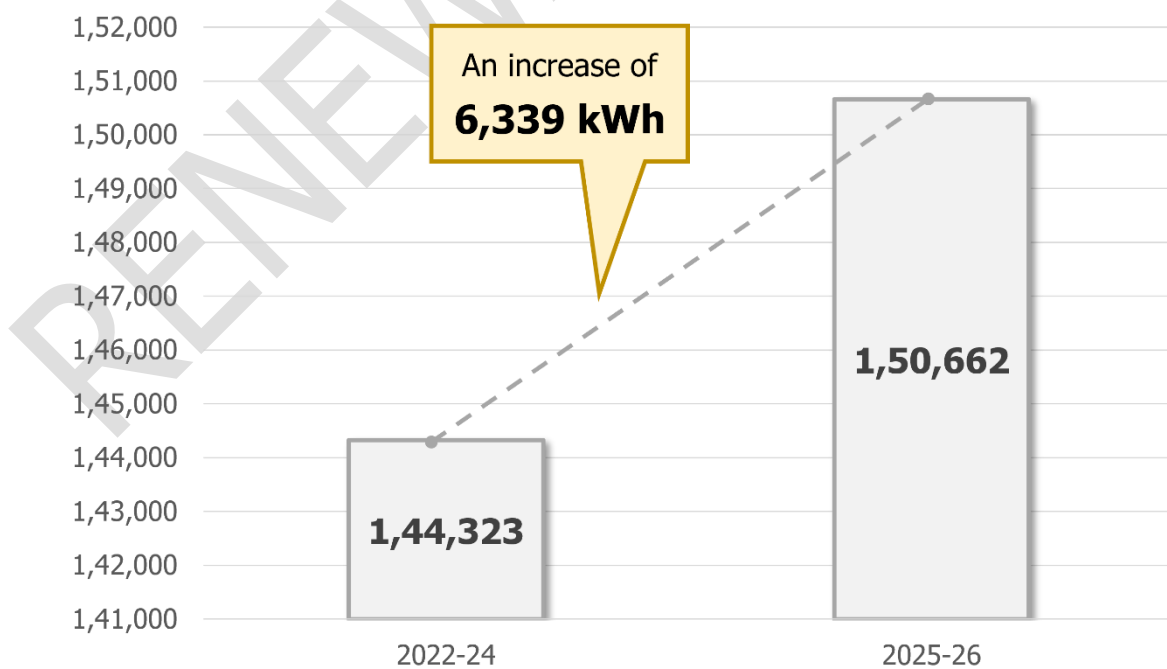


Figure 6: Comparative study of electrical requirement in kWh

6. Compliance

The compliance study was carried out through investigative ways. This was done to understand extent of implementations based on previous reports.

- Original report study was for 2020-21 and 2021-22
- Renewal was done for 2023-24
- Renewal study is currently done for June 2025 onwards

6.1 The Action taken report

Clara's College of Commerce
Yari Road, Versova, Andheri -(W),
MUMBAI-61

Action Taken Report
on
Green audit / Environment audit/ Energy audit

Sr. No.	Recommendation	Action Taken	
1	Fluorescent Tube Lights (20W, 36W, 40W) and Fluorescent Tube Lights with Ballast (36W+14W (ballast), 40W+14W (ballast)) can be replaced with star rated appliances.	Once the old lights stop working it is replaced by LED lights. Total of 147 old lights have been replaced with LED lights.	
		Floor no.	Numbers of LED installed
		1	24
		2	21
		3	26
		4	41
		5	19
		6	6
		Ground Floor	10
	Total	147	
2	Ceiling fans can be replaced with star rated appliances.	Total of 29 old ceiling fans were replaced with Crompton fans.	



MPelle
Principal

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Plate 6: Compliance status

7. Suggestion

The suggestion (inference) would act as a 'PLAN OF ACTION' to implement all the suggestions in a detailed manner.

- ➔ Conduct the 'Before' and 'After' study with photos
- ➔ Document the same in 'Action taken report'

S. No.	Aspect with evidence if any	Suggestion
1.	Fire and life safety aspect Aspect area: Display information	<p>Introduce instruction manual for:</p> <ul style="list-style-type: none"> ➔ How to use a fire hose reel? ➔ RACE boards in ground floor of every block ➔ Detail specification for fire hose reel drum with information about Range, pressure, diameter, location ➔ Name each fire alarm and hose reel such as CCOE/Fire Hose Reel/ IT Block / Ground floor/ NO. (1, 2 etc.) <p>Along every fire mechanism include display board such as 'Last maintenance date – Done by (Name) – Under supervision of Institute incharge (Name)) For report contact administration'</p>
2.	Fire and life safety aspect Aspect area: Lift safety	<ul style="list-style-type: none"> ➔ Introduce signage 'DO NOT USE LIFT IN CASE OF FIRE' ➔ Introduce fire escape route plan: ➔ Highlight the corridors in light green highlighter ➔ Signify the outline of staircase block ➔ Include a ✘ symbol on lift & note on plan 'Do not use lift' ➔ Highlight the locations of fire extinguisher in a blue or brown box and mention same in legend ➔ Include 'You are here' indication on the route plan
3.	Energy generation aspect Aspect area: UPS and Power room	<p>The precautionary measures should be taken in all power areas.</p> <ul style="list-style-type: none"> ➔ Remove any unwanted storage ➔ Civil work of entrance ➔ Introduce rubber mat in entire area ➔ Introduce an air conditioner in each UPS/ Power room with a set temperature at 25°C to avoid overheating ➔ Remove the wires that are not required

		<p>➔ Danger sign outside the room</p> 
<p>4.</p>	<p>Structural safety aspect <u>Aspect area:</u> Safety signages</p>	<p>Include 'Restricted area ZONE' board for access near terrace area</p> 

Table 5: Observation based suggestion study of the campus

RENEWAL

8. Compilation

The study is based on the data collected, analyzed, rechecked, and confirmed through multiple modes. For the quality study, some standards/ notes have been referred to. These are listed and noted below. However, no direct references have been used anywhere. These are used as a base to analyze and study the data collected.

Specific references for study related to energy

- <https://www.energy.gov/eere/buildings/zero-energy-buildings>
- <https://www.dsaarch.com/zero-net-positive-energy>
- U.S. Energy Information Administration
- <https://www.happysprout.com/inspiration/what-is-smart-gardening/>
- <https://ieeexplore.ieee.org/document/6779316>
- [https://www.murata.com/en-global/apps/industry/security/entrance and exit system](https://www.murata.com/en-global/apps/industry/security/entrance%20and%20exit%20system)
- <https://www.energyguide.be/en/questions-answers/what-are-the-alternatives-to-air-conditioning/2121/>
- IGBC Green Campus rating system Abridged Reference Guide
- GEM Sustainability Certification Rating Program
- Inference study reference images
 - https://seors.unfccc.int/applications/seors/attachments/get_attachment?code=NG125PFE4WHMWSYAK8TCAKIHMWX0F4QD
 - <https://housing.com/news/smart-gardening/>
 - <https://solarpowerproject.in/solar-panels-for-parking-lots.php>

