ENERGY, ENVIRONMENT AND GREEN AUDIT REPORT

For

GHULAM AHMED COLLEGE OF EDUCATION

Mount Pleasant, 8-2-249 to 267,
Road No. 3, Banjara Hills,
Hyderabad - 500 034, Telangana State, India

Prepared by: -

NIN Energy India Private Limited
JUSA Complex, New No 47, Old No 21/2
Ponniamman Koil Street, Kottur, Chennai-600085
Tamilnadu, India.

NAME OF THE ACCREDITED ENERGY AUDITOR : B. SENTHIL KUMAR

BEE ACCREDITED NUMBER : AEA 023

Advisor-cum-Director
Ghulam Ahmed College of Education
Road No. 3, Banjara Hills,
Hyderabad - 34.

Ghulam Ahmed College of Education

AUGUST 2022

ACKNOWLEDGEMENT

We thank management of **GHULAM AHMED COLLEGE OF EDUCATION** for awarding the Green Audit, Energy and Environment study at their facility at **Hyderabad** to NIN Energy India Private Limited. This report is the result of Energy, Green, Environment audit conducted at – GHULAM AHMED COLLEGE OF EDUCATION, HYDERABAD from 24-08-2022 to 26-08-2022.

We wish to thank officials of GHULAM AHMED COLLEGE OF EDUCATION for their support during the audit for successful conduct of the audit

For NIN ENERGY INDIA PRIVATE LIMITED

NIN ENERGY INDIA PVT. LTD. CHENNAI 600 085

(B. SENTHILKUMAR)

DIRECTOR

ACCREDITED ENERGY AUDITOR BY BUREAU OF ENERGY EFFICIENCY

(AEA 023)

Advisor-cum-Director
Ghulam Ahmed College of Education
Road No. 3, Banjara Hills,
Hyderabad - 34.

Ghulam Ahmed College of Education

List of Abbreviations

EE	Energy Efficiency
CFL	Compact Fluorescent Lamps
EEM	Energy Efficiency Measure
EER	Energy Efficiency Ratio
FTL	Fluorescent T8
kWh	Kilo Watt hour
LED	Light Emitting Diode
tCO2	Tonne of Co2

Advisor-cum-Director
Ghulam Ahmed College of Education
Road No. 3, Banjara Hills,
Hyderabad - 34.

Ghulam Ahmed College of Education

Table of Contents

Advisor-cum-Director
Ghulam Ahmed College of Education
Road No. 3, Banjara Hills,
Hyderabad - 34.

1. EXCUTIVE SUMMARY

S. No	Energy Efficient Measures	Estimated Annual Energy Savings, kWh/Annum	Estimated Investment, INR	Monetary Savings, INR/Annum	Simple Payback Period, Months
1	Replace existing Tube light to LED	11,500	92,400	80,499	14

Annual Electrical Energy consumption, kWh/Annum	**5,94,232**
Annual Electrical Energy savings, kWh/Annum	11,500
Electrical Energy savings, %	**1.94**

2. INTRODUCTION

2.1 About University

Ghulam Ahmed College of Education was established in the year 1985 with the mission of providing quality education to trainee teachers through the B.Ed. and M.Ed. courses. Along with a sound theoretical base, the students are given a wide exposure to practical work. The B.Ed. students are sent to various schools of the city for their teaching practice programme for 20 days. The M.Ed. students take up research in different areas related to education.

The B.Ed. and M.Ed. courses being offered in the College are affiliated to the Osmania University. The National Council for Teacher Education (NCTE) has accorded its recognition to it. The college has applied to NAAC for reaccreditation this year.

2.2 Vision

To produce quality teachers through holistic teacher education by igniting young minds towards excellence in education and societal commitment

2.3 Mission

1. To be a leader in providing flexible, quality teacher education to the minority student teachers of the community.
2. To provide a high standard of training to student teachers through the B.Ed. and M.Ed. courses.
3. To develop an integrated personality in its students. To orient the students in the foundations of research.
4. To acquaint the in-service teachers with the latest trends/contemporary issues in education and help them solve their problems.

Advisor-cum-Director
Ghulam Ahmed College of Education
Road No. 3, Banjara Hills,
Hyderabad - 34

2.4 Objective

1. To foster the academic growth and intellectual development of the students.
2. To train the students in the art of teaching secondary school children.
3. To develop an understanding of the problems of the children with special educational needs.
4. To help in the development of the students over all personality.
5. To make the student teachers understand the concept, objectives, and need for environmental education.
6. To help provide financial support to the students in the form of scholarships.
7. To help in the development of the community and the nation.
8. To provide equal educational opportunities to all students.
9. To enable the students to take up research in education.
10. To meet the global trends and demands.
11. To foster values in the student teachers

GENERAL DETAILS		
S. No	**Description**	**Details**
1	Name of the college	GHULAM AHMED COLLEGE OF EDUCATION
2	Address	8-2-249 TO 267 "MOUNT PLEASANT" RD # 3, B'Hills, Hyd.
3	No of building blocks & Building blocks details	ONE
4	No of departments and its details	ONE
5	No of student's details	300
6	No of Teaching staff	16
7	No of Non-Teaching staff	10
8	No of Guest lectures	0
9	Courses available in the college	2 COURSES

3. AUDIT TEAM

The Green audit assessment was done by the NIN Energy India private Limited team. Team details are as follows

Name	Designation
Mr. B. Senthil Kumar	Accredited Energy Auditor
Mr. T. Karthikeyan	Certified Energy Auditor
Mr. S. Senthamil Selvan	Sr. Engineer

4. BUILDING BLOCK DETAILS

Advisor-cum-Director
Ghulam Ahmed College of Education
Road No. 3, Banjara Hills,
Hyderabad - 34.

The details of the building, year of construction, no. of rooms and labs are listed below

S. No	Name of the Building	Year of Construction	Source of Funding	No of Rooms	No. Of Labs
1	B. ED BLOCK	1985	SOCIETY	21	6

5 ENVIRONMENTAL AUDIT

Carbon footprint is the total sum of greenhouse gases (GHG) emission caused by an organization, vent, product, or person. As we are aware, the increasing concentration of GHGs in the atmosphere can accelerate climate change and global warming, it is very necessary to measure these emissions from our day-to-day activities. The first step towards managing GHG emissions is to measure them.

There are some standards and guidelines to measure GHG emissions like GHG protocol, ISO 14064, the more comprehensive one Life Cycle Assessment (LCA), and market-based mechanisms. Out of them, ISO 14064 is an offset protocol and independent, voluntary GHG project accounting standard help to quantify GHG emission of the organization, event, product, or person.

Our day-to-day activities are dependent on electricity which is mostly coming from coal-based power plants, Diesel and Petrol for our vehicles and LPG for cooking in our kitchen. All of the energy we use is derived from these fossil fuels which are GHG intensive.

6 WATER CONSERVATION MEASURES

6.1 Replacement of normal water taps with water efficient taps

At present, normal water taps are used in the wash basin and showers. It is recommended to change water efficient water taps in the campus which will save 50 % of the water consumption in taps and showers.

S. No	Description	Units	Values
1	Normal water taps flow	LPM	10
2	Water efficient taps flow	LPM	5
3	Water savings	%	50

Cost of the water taps and showers

S. No	Description	Price
1	Water efficient tap nozzle	550
2	Water efficient showers	1200

Advisor-cum-Director
Ghulam Ahmed College of Education
Road No. 3, Banjara Hills,
Hyderabad - 34.

6.2 Proposal for Installing Drip Water Irrigation System for Trees and Plants

In campus, there are around 1550 to 800 plants and Trees were being grown. Water required for the plants and Trees about 800 Lac Litres (Approximately). It is highly proposed to install drip water irrigation system in the campus which will save more amount of water.

7 WATER MANAGEMENT

The water management system details are as follows.

S. No	Parameters	Response
1	Source of water	MUNICIPAL
2	No of Wells	2
3	No of motors used	2
4	Overall average water consumption in the institution per day (in litres)	250
5	Average drinking water consumption in the hostel per day (in litres)	Nil
6	Average drinking water consumption in the college per day (in litres)	100 Litres
7	Average Water consumption for washroom per day (in litres)	20 Litres
8	Average Water consumption for gardening per day (in litres)	80 Litres
9	Any water wastage/why?	60 Litres (While Filtering)
10	Rainwater harvest available? If yes, Mention number of units	Yes - 2
11	Number of rainwater collection sump,	1
12	Areas of utilization of rainwater	Gardening

Advisor-cum-Director
Ghulam Ahmed College of Education
Road No. 3, Banjara Hills,
Hyderabad - 34.

8 ROUTINE GREEN PRACTICES

Every year college celebrates World Environment Day, World Water Day and Ozone Day in the campus. The focus of these programs was to provide awareness to the students about the importance of the environment, its conservation and sustainable use of environmental resources. The programs are conducted through seminars, poster presentation, quiz competition debates etc.

9 WASTE MANAGEMENT

9.1 Solid waste management:

Waste management is important for an ecofriendly campus. In college different types of wastes are generated, its collection and management are very challenging. The following data provide the details of the waste generated and the disposal method adopted by the college.

Waste management Practices adopted by the college:

For the last few years, college is following proper waste protocol throughout the campus. The daily wastes generated by the students and staffs were collected using dustbins and disposed to local garbage collector vehicle from corporation. The chemicals from the laboratories are disposed in a sealed tank along with water, so that the chemicals undergo neutralization with the water. Additionally, Used Sanitary napkins were collected and disposed separately by using napkin collector.

9.2 Hygienic measure

Some Hygienic Measures that taken from the university side,

HYGIENIC MEASURES		
S. No	**Description**	**Details**
1	No of rest rooms available in the campus	-
2	Availability of lighting and ventilation facilities	YES
3	Frequency of cleaning the rest rooms per day / week	DAILY
4	Way of disposing sanitary napkins in college and hostel	DUMPING OUT SIDE
5	Any steps taken by college in distributing sanitary napkins	DUMPING OUT SIDE

Advisor-cum-Director
Ghulam Ahmed College of Education
Road No. 3, Banjara Hills,
Hyderabad - 34.

Ghulam Ahmed College of Education

10 CARBON FOOTPRINT ANALYSIS

Objective

To assess the amount of carbon dioxide produced in the campus by the human activities either direct or indirect contribution.

CARBON FOOT PRINT ANALYSIS		
S. No	**Description**	**Details**
1	No of Four wheelers used by students	0
2	No of Four wheelers used by staff	2
3	No of Two wheelers used by students	20
4	No of Two wheelers used by staff	20
5	No of people using public transport (Staff)	10
6	No of people using public transport (Students)	280

Floristic status of the institution:

The Current situation of planted trees are as follows:

Particulars	Number/area
Matured trees	**80**
Semi-grown trees	**100**
Bushes (including floriculture plants)	**1000**
No of medicinal plants	**50**
Any other plants details if any	**15**

Matured trees (above 5 years), semi-grown trees (below 5 years), shrubs.

Campus farming

The college has planning to start a novel venture of cultivation of fruit trees in the campus. In addition, Organic vegetable farm, medicinal plant garden will be established soon.

Energy Consumption Scenario

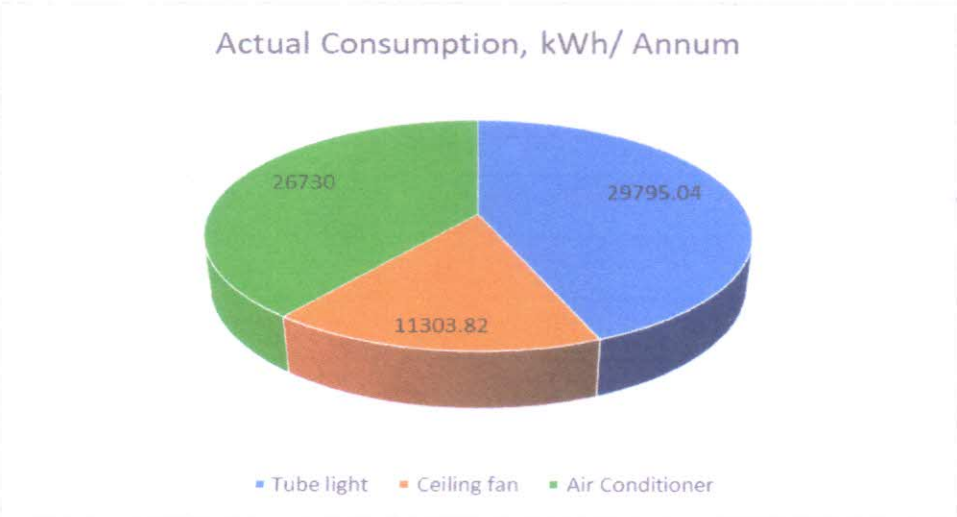
The campus electricity consumption details by utility wise

1. The College total electricity consumption by utility grid is 49519.33 kWh during the period 2021 – 2022.
2. The ceiling fans are used for ventilation purposes and their total consumption is 11303.82 kWh/Annum.
3. The Electricity consumed by the various lighting system is 29795.04 kWh/Annum.
4. The campus non five star rated air conditioners electricity consumption is only consider here, and the value is 26730 kWh/Annum.

Advisor-cum-Director
Ghulam Ahmed College of Education
Road No. 3, Banjara Hills,
Hyderabad - 34.

Annual Energy consumption by various loads

S. No	Major Load Details	Actual Consumption, kWh/ Annum
1	Tube light	29795.04
2	Ceiling fan	11303.82
3	Air Conditioner	26730.00



Carbon absorption by flora in the Institution

Carbon absorption capacity of one matured tree = 6.8 of CO_2. In bushes it absorbs an average of 200 g of CO2. The carbon absorption capacity of a 10-sq.ft. area of lawn is 1 g CO_2.

1. Therefore, the carbon absorption capacity of 80 matured trees in the campus of the Institution (80 × 6.8 kg $CO_{2/Annum}$) = 544 kg of $CO_{2/Annum}$.
2. The carbon absorption capacity of 100 semi-grown trees is 50% of that of full- grown trees. Hence, the carbon absorption (100 × 3.4 kg $CO_{2/Annum}$) = 340 kg of $CO_{2/Annum}$.
3. There are 1000 bushes of various species being raised in the gardens of the Institution, total carbon absorption was calculated to be 1000 × 200 g $CO_{2/Annum}$) = 200 kg of $CO_{2/Annum}$

The grand total of carbon absorption by the flora in the campus is 1084 kg per year.

Advisor-cum-Director
Ghulam Ahmed College of Education
Road No. 3, Banjara Hills,
Hyderabad - 34.

CO2 REDUCTION MEASURES:

Replacing Tube light with LED Implementation

The Institution using Tube light for the lighting purpose by replacing it with LED tubes the institution will save up to 29795.04 kWh savings per annum which means 7.72 Ton of CO2 reduction is possible.

Utility	Actual Consumption, kWh/Annum	Projected savings, kWh/Annum
Tube Light	29795.04	11,500

The following table illustrates the total quantity of CO2 reduced through various measures,

Energy Saving measures	CO2 reduction, Tons/Annum
Replace existing Tube light to LED	9.43
Total	9.43

Net Carbon emission of the campus

Description	Unit	Values
Carbon emitted due to the energy consumption in the campus	tCO2 /year	5306.78
Carbon absorption by mature trees, semi mature trees, bushes and lawns	tCO2 /year	-1.08
Net carbon emission of the campus	tCO2 /year	5305.70
Carbon reduction opportunities by energy saving projects	tCO2 /year	9.43

Suggestion and Recommendations

There following terms can improve the green campus status of the University,

1. It is recommended to go for additional plantation of gardens, trees, and lawns in possible location to enhance oxygen emission.
2. Energy-efficient measures such as replacement of all old Non-LED with LED lamps, old electrical regulators of fans with energy-efficient gorilla fans, air-conditioning units with 5-star rated invertor systems need to be undertaken.
3. Biogas plants shall be installed in the campus using solid waste. The biogas shall be used by Hostel.
4. All the water taps shall be fitted with high-efficiency aerator taps to reduce wastage of water.
5. All toilets shall be fitted with dual- flush water closets, which will reduce water consumption by 40%

Advisor-cum-Director
Ghulam Ahmed College of Education
Road No. 3, Banjara Hills,
Hyderabad - 34.

11 ENERGY AUDIT

11.1 Transformer Details

The transformer details are as follows:

Parameters	Values
Manufacturer	VIJAY ELECTRICALS
KV	11 KV
Frequency	50 Hz
KSV	12 KV
	Current Transformer
Ratio	11 KV
Burden	5 VA
Class of Accuracy	32B
STC	5 KA FOR 15 COMD
QTY OF OIL	50 Litres [Approx]
	Voltage Transformer
Ratio	11KV/110 V
Burden	10 VA
Class of Accuracy	62
Phase	3
Total Weight	150 KG [Approx]

11.2 DG Details

The Dg details are as follows

Parameters	DG-1
Make	KIRLOSKAR
Type	4R810TAGI
Serial No	T4.8903/1500234
KVA	63
Frequency	51
Phase	3
RPM	1500
Diesel consumption details/Year	11 Litres/Hr

Advisor-cum-Director
Ghulam Ahmed College of Education
Road No. 3, Banjara Hills,
Hyderabad.- 34.

Ghulam Ahmed College of Education

12 ELECTRICITY BILLS

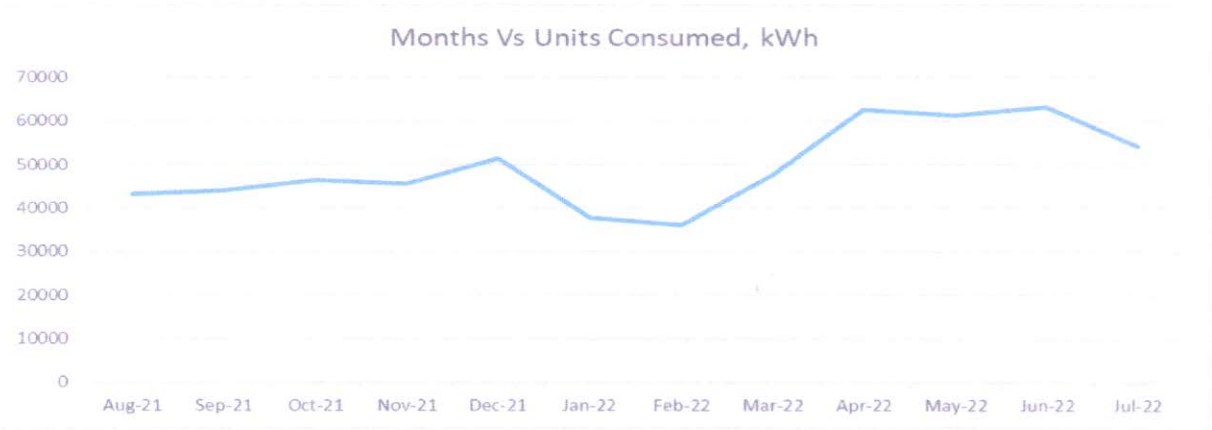
The Campus receives electricity supply from Southern Power Distribution Company of Telangana Limited and the details of the supply are as follows,

Source	Southern Power Distribution Company of Telangana Limited
Feeder Number	108122140502
Average Unit consumption, kWh	49519.33
Average demand, kVA	326

Month	Sanctioned demand, kVA	Recorded Maximum Demand, kVA	% Of Demand Utilisation	Maximum demand charge, INR	Units Consumed, kWh	Units Consumed, kVArh	Electricity consumption charges, INR	PF	Maximum Demand penalty	Total bill paid, INR	Unit cost, INR/kWh
Aug-21	350	265.76	76%	109200	43320	43463	3,46,560.00	0.997	0	4,55,827.00	7.80
Sep-21	350	346.34	99%	135070	44125	44267	3,53,000.00	0.997	0	4,90,300.00	7.80
Oct-21	350	327.00	93%	127893.44	46519	46624	3,72,152.00	0.998	0	5,00,619.00	7.80
Nov-21	350	347.00	99%	135359.21	45516	45667	3,64,128.00	0.997	0	5,00,846.00	7.80
Dec-21	350	295.98	85%	115432	51474	51623	4,11,792.00	0.997	0	5,29,140.00	7.80
Jan-22	350	240.98	69%	109200	37790	37882	3,03,056.00	0.998	0	4,14,193.00	7.80
Feb-22	350	246.03	70%	109200	36045	36102	2,88,360.00	0.998	0	4,00,866.00	7.80
Mar-22	350	309.50	88%	120704	47848	47976	3,82,784.00	0.997	0	5,06,207.00	7.80
Apr-22	350	382.88	109%	149935	62677	63019	5,01,416.00	0.995	28172	6,61,415.00	8.80
May-22	350	382.56	109%	166250	61276	61695	4,90,208.00	0.993	30936.18	5,39,228.80	8.80
Jun-22	350	399.00	114%	166250	63359	63808	5,06,872.00	0.993	46710.07	7,88,190.00	8.80
Jul-22	350	372.00	106%	166250	54283	54776	4,34,264.00	0.991	21797	6,84,846.00	8.80

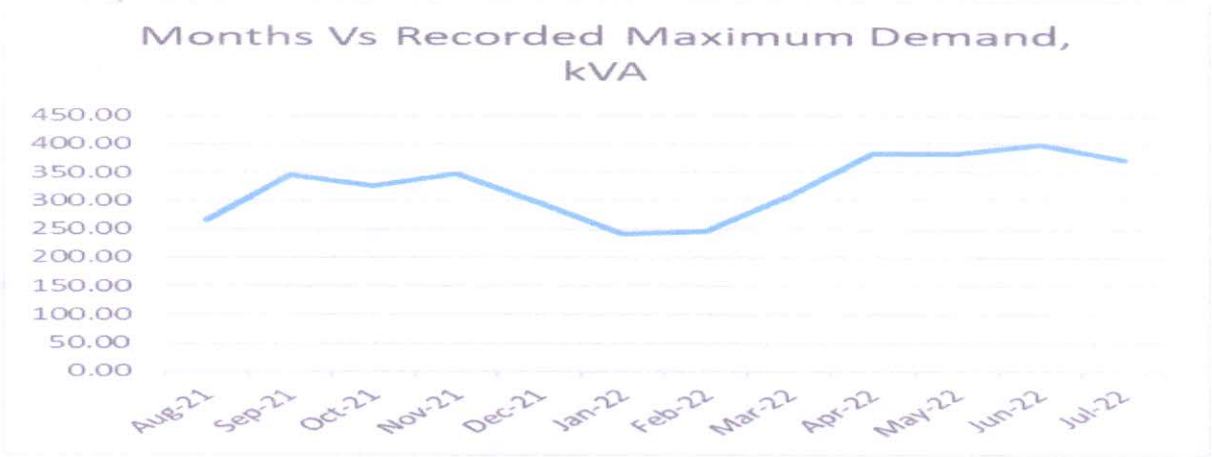
- The plant has paid penalty for exceeding maximum demand for the month of April 2022 to July 2022. It is recommended to increase the maximum demand to avoid penalty.

The graphical representation between consumed Units vs. month is shown below:



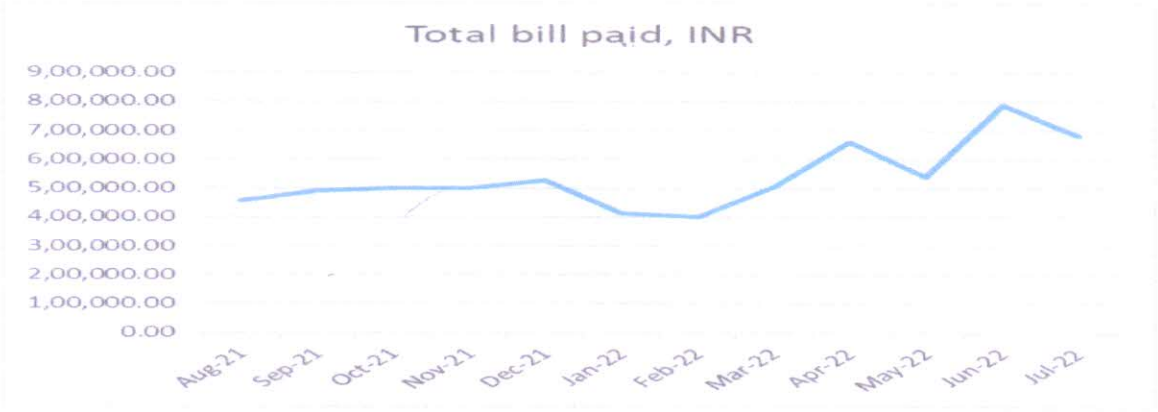
It is observed that maximum units are consumed in the month of June-2022 and minimum in the month of February 2022.

The graphical representation between maximum demand, kVA vs. month is shown below:



It is observed that maximum demand is attained in the month of June-2022 and minimum in the month of January 2022.

The graphical representation between Total Bill vs. month is shown below:



It is observed that maximum bill is paid in the month of June-2022 and minimum in the month of February 2022.

Advisor-cum-Director
Ghulam Ahmed College of Education
Road No. 3, Banjara Hills,
Hyderabad - 34.

Ghulam Ahmed College of Education

13 INVENTORY DETAILS

13.1 Lighting

At Present, campus using the following lights for lighting purpose. The details of the lights with wattage and operating hours are listed below,

FLOOR	LOCATION	TYPE OF LIGHT	NO OF LIGHTS	WATTAGE	OPERATING HOURS
Ground Floor	Hall No.1	Tube Lights	15	600	06.00 Hours
Ground Floor	Hall No.1	Bulbs	6	54	06.00 Hours
Ground Floor	Hall No.2	Tube Lights	7	280	06.00 Hours
Ground Floor	Hall No.2	Bulbs	6	54	06.00 Hours
Ground Floor	Hall No.3	Tube Lights	5	200	06.00 Hours
Ground Floor	Hall No.3	Bulbs	1	9	06.00 Hours
Ground Floor	Hall No.4	Tube Lights	5	200	06.00 Hours
Ground Floor	Hall No.4	Bulbs	1	9	06.00 Hours
Ground Floor	Hall No.5	Tube Lights	7	280	06.00 Hours
Ground Floor	Hall No.5	Bulbs	1	9	06.00 Hours
Ground Floor	Hall No.6	Tube Lights	6	240	06.00 Hours
Ground Floor	Hall No.6	Bulbs	3	27	06.00 Hours
Ground Floor	Corridor	Tube Lights	11	440	06.00 Hours
Ground Floor	Corridor	Bulbs	6	54	06.00 Hours
Ground Floor	Toilets	Tube Lights	2	80	06.00 Hours
Ground Floor	Toilets	Bulbs	2	18	06.00 Hours
Ground Floor	Staircase	Tube Lights	2	80	06.00 Hours
Ground Floor	Staircase	Bulbs	2	18	06.00 Hours
Ground Floor	Portico	Tube Lights	2	80	06.00 Hours
Ground Floor	Admin Office	Tube Lights	2	80	06.00 Hours
Ground Floor	Visitors Room	Tube Lights	2	80	06.00 Hours
Ground Floor	Teaching Staff Room 1	Tube Lights	2	80	06.00 Hours
Ground Floor	Teaching Staff Room 1	Bulbs	1	9	06.00 Hours
Ground Floor	Admin Office Room -2	Tube Lights	3	120	06.00 Hours
Ground Floor	Principal Room	Tube Lights	3	120	06.00 Hours
Ground Floor	Principal Room	Bulbs	1	9	06.00 Hours
Ground Floor	Conference Hall	Tube Lights	8	320	06.00 Hours
1st Floor	Library	Tube Lights	15	600	06.00 Hours
1st Floor	Staff Room 1	Tube Lights	2	40	06.00 Hours
1st Floor	Staff Room 2	Tube Lights	2	40	06.00 Hours
1st Floor	Staff Room 3	Tube Lights	2	40	06.00 Hours
1st Floor	Staff Room 4	Tube Lights	2	40	06.00 Hours
1st Floor	Staff Room 5	Tube Lights	2	40	06.00 Hours
1st Floor	Ladies Toilet	Tube Lights	1	40	06.00 Hours
1st Floor	Ladies Toilet	Bulbs	1	100	06.00 Hours
1st Floor	Gents Toilet	Bulbs	1	100	06.00 Hours
1st Floor	Staircase	Tube Lights	1	40	06.00 Hours

Advisor-cum-Director
Ghulam Ahmed College of Education
Road No. 3, Banjara Hills,
Hyderabad - 34.

Ghulam Ahmed College of Education

FLOOR	LOCATION	TYPE OF LIGHT	NO OF LIGHTS	WATTAGE	OPERATING HOURS
1st Floor	Physical Science Lab	Tube Lights	4	160	06.00 Hours
1st Floor	Social Science Lab	Tube Lights	6	240	06.00 Hours
1st Floor	Psychology Lab	Tube Lights	4	160	06.00 Hours
1st Floor	Computer Lab	Tube Lights	6	240	06.00 Hours
1st Floor	SUPW Lab	Tube Lights	4	160	06.00 Hours
1st Floor	Staff Room D.Ed.	Tube Lights	15	600	06.00 Hours
1st Floor	Biological Science Lab	Tube Lights	4	160	06.00 Hours
1st Floor	Corridor	Tube Lights	5	200	06.00 Hours
1st Floor	Corridor	Bulbs	2	200	06.00 Hours
2nd Floor	Class Room - M2	Tube Lights	7	280	06.00 Hours
2nd Floor	Class Room - M3	Tube Lights	12	480	06.00 Hours
2nd Floor	Seminar Hall	Tube Lights	12	480	06.00 Hours
2nd Floor	Board Room	Ceiling Lights	12	480	06.00 Hours
2nd Floor		Roof Lights	12	108	06.00 Hours
2nd Floor	Corridor	Tube Lights	4	160	06.00 Hours
3rd Floor	Tutorial Room 2	Tube Lights	7	280	06.00 Hours
3rd Floor	Class Room 12	Tube Lights	7	280	06.00 Hours
3rd Floor	Computer Lab	Tube Lights	12	480	06.00 Hours
3rd Floor	Class Room 15	Tube Lights	8	320	06.00 Hours
3rd Floor	Class Room 16	Tube Lights	7	280	06.00 Hours
3rd Floor	Class Room 17	Tube Lights	8	320	06.00 Hours
3rd Floor	Class Room 18	Tube Lights	8	320	06.00 Hours
3rd Floor	Faculty Room	Tube Lights	8	320	06.00 Hours
3rd Floor	Corridor	Tube Lights	3	120	06.00 Hours
3rd Floor	Corridor	LED Bulbs	5	45	06.00 Hours
3rd Floor	Gents Toilet-1	Tube Lights	1	40	06.00 Hours
3rd Floor	Gents Toilet-2	Tube Lights	1	40	06.00 Hours
3rd Floor	Ladies Toilet-1	Tube Lights	2	80	06.0 ours

Advisor-cum-Director
Ghulam Ahmed College of Educatior
Road No. 3, Banjara Hills,
Hyderabad - 34.

Ghulam Ahmed College of Education

13.2 Ceiling Fan details

At Present, campus using the following Fans for Ventilation purpose. The details of the Fans with wattage and operating hours are listed below

FLOOR	LOCATION	NO OF FANS	WATTAGE	OPERATING HOURS
Ground Floor	Hall No.1	12	396	06.00 Hours
Ground Floor	Hall No.2	6	198	06.00 Hours
Ground Floor	Hall No.3	4	132	06.00 Hours
Ground Floor	Hall No.4	4	132	06.00 Hours
Ground Floor	Hall No.5	4	132	06.00 Hours
Ground Floor	Hall No.5	5	165	06.00 Hours
Ground Floor	Admin Office	2	66	06.00 Hours
Ground Floor	Visitors Room	1	33	06.00 Hours
Ground Floor	Teaching Staff Room 1	1	33	06.00 Hours
Ground Floor	Admin Office Room -2	2	66	06.00 Hours
Ground Floor	Principal Room	1	33	06.00 Hours
Ground Floor	Conference Hall	4	132	06.00 Hours
1st Floor	Library	7	231	06.00 Hours
1st Floor	Staff Room 1	1	33	06.00 Hours
1st Floor	Staff Room 2	1	33	06.00 Hours
1st Floor	Staff Room 3	1	33	06.00 Hours
1st Floor	Staff Room 4	1	33	06.00 Hours
1st Floor	Staff Room 5	1	33	06.00 Hours
1st Floor	Physical Science Lab	4	132	06.00 Hours
1st Floor	Social Science Lab	3	99	06.00 Hours
1st Floor	Psychology Lab	3	100	06.00 Hours
1st Floor	Computer Lab	4	132	06.00 Hours
1st Floor	SUPW Lab	2	66	06.00 Hours
1st Floor	Staff Room D.Ed.	4	132	06.00 Hours
1st Floor	Biological Science Lab	2	66	06.00 Hours
2nd Floor	Class Room - M2	7	231	06.00 Hours
2nd Floor	Class Room - M3	9	297	06.00 Hours
2nd Floor	Seminar Hall	16	528	06.00 Hours
2nd Floor	Board Room	6	198	06.00 Hours
3rd Floor	Tutorial Room 2	7	231	06.00 Hours
3rd Floor	Class Room 12	7	280	06.00 Hours
3rd Floor	Computer Lab	9	297	06.00 Hours
3rd Floor	Class Room 15	6	198	06.00 Hours
3rd Floor	Class Room 16	6	198	06.00 Hours
3rd Floor	Class Room 17	6	198	06.00 Hours
3rd Floor	Class Room 18	6	198	06.00 Hours
3rd Floor	Faculty Room	8	264	06.0 ours

Advisor-cum-Director
Ghulam Ahmed College of Education
Road No. 3, Banjara Hills,
Hyderabad - 34.

13.3 Air Conditioning Details

At Present, campus using the following Air Conditioner for room cooling purpose. The details of the Air conditioner with model, star rating and operating hours are listed below.

AIR CONDITIONER DETAILS								
S. NO	NAME OF THE BLOCK	FLOOR	LOCATION	MAKE	MODEL (Split / Window)	Load, kW	NO OF AC'S	OPERATING HOURS
1	B.Ed.	Ground	Principal's Room	Panasonic	Split	0.9	1	06.00 Hours
2	B.Ed.	2nd	Seminar Hall	Panasonic	Split	0.9	6	06.00 Hours
3	B.Ed.	2nd	Board Room	LLOYD	Split	0.9	2	06.00 Hours
4	B.Ed.	3rd	Computer Lab	LLOYD	Split	0.9	3	06.00 Hours
5	B.Ed.	3rd	Faculty Room	LLOYD	Split	0.9	1	06.00 Hours
6	B.Ed.	3rd	Faculty Room	LG	Split	0.9	2	06.00 Hours

14 RECOMMENDATION FOR ENERGY SAVINGS

14.1 REPLACE TUBE LIGHT TO LED

Observation:

At Present, there are 264 Nos of Tube light is used for illumination purposes. The average power consumption of one Tube light is 40 W.

Recommendation:

It is recommended to replace the Tube lights to LED lights with 18W to observe the following energy savings.

Estimated savings

Replace existing Tube Lights to LED		
Description	Units	Values
Quantity of existing Tube Light	Nos	264
Wattage of Tube Light	W	40
Running hours	hours/day	6
Total working days	days/Annum	330
Average unit cost	INR/kWh	7.80
Energy Consumption by existing Tube lights	kWh/Annum	20,909
Wattage of LED	W	18
Energy Consumption by LED	kWh/Annum	9,409
Cost of one LED	INR	350
Energy savings	kWh/Annum	11,500
Cost Savings	INR/Annum	89,699
Investment	INR	92,400
Payback Period	Months	12

Advisor-cum-Director
Ghulam Ahmed College of Education
Road No. 3, Banjara Hills,
Hyderabad - 34.