PRINCIPAL
Kandivli Education Society's
B. K. Shroff College of Arts &
M. H. Shroff College of Commerce
Bhulabhai Desai Road,
Kandivli (West), Mumbai-67

2020

ENERGY AUDIT REPORT

December 2020

Prepared For:	**Prepared By:**
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HEAD
CRITERIA – VII
Institutional Values and Best Practices

KES's SHROFF COLLEGE OF ARTS & COMMERCE KANDIVALI (W), MUMBAI-67.

Index

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KES's SHROFF COLLEGE OF ARTS & COMMERCE KANDIVALI (W), MUMBAI-67.

List of figures:

1. Introduction

Kandivli Education Society's BK Shroff College Of Arts and MH Shroff College Of Commerce. is an autonomous institute in the suburban region of Mumbai. It is managed by Kandivali education society and is known for offering diploma, degree and post-graduation courses in the fields of arts and commerce. It was established in 1989 and got UGC recognition in 2010. The student strength is approximately 8500.

1.1 Energy audit objective

This energy audit assumes significance due to the fact that the Kandivli Education Society's BK Shroff College Of Arts and MH Shroff College Of Commerce. electricity bill had crossed Rs.50 Lakhs for the academic year 2018-19 and it was aimed at obtaining a detailed idea about the various end use energy consumption activities and identifying, enumerating and evaluating the possible energy savings opportunities. The target is to achieve savings in the electrical energy consumption to the extent of 20%. The audit was also aimed at giving the students a feel of the practical problems and difficulties in carrying out energy audits.

1.2 Specific Energy Consumption (SEC)

The Specific Energy Consumption (SEC) is defined as the energy consumption per unit of product output. The specific energy consumption considering students, faculty and staff members were calculated which forms the institute SEC and was taken as reference for comparison.

1.3 Segmentation

The segmentation of the energy audit has been done floor/facility wise and also as per the old and new building of the educational institute.

2. Energy audit

2.1 Energy audit methodology

The methodology adopted for this audit was

- Formation of audit groups for specific areas and end use
- Visual inspection and data collection
- Observations on the general condition of the facility and equipment and quantification
- Calculations, analyses and assumptions
- Potential energy saving opportunities
- Implementation

2.2 Grouping and strategy

The following groups were formed with specific target areas and end use assigned.

Group 1: Old building

Group 2: New building

2.3 Benchmarking

Both the institutions combined together house over 150 rooms. The rooms have been classified into various categories depending on the nature of activity conducted in the room and the number of hours the electrical/ electronic appliances are used.

- Classroom
- Special room
- Office
- Common area
- Gymkhana
- Library
- Computer lab
- Washroom

3. Quantification

3.1Floor wise energy consumption (Old building)

Ground floor:

Sr. No	Equipment	No of units	Location	Wattage	Usage per day (Hrs)	Energy consumption(kWh)
1	LED panel light	27	Common area	20	2	1.08
2	Ceiling fan	6	Common area	75	2	0.9
3	Tube lights	6	Nature club & Cultural room	40	2	0.48
4	Ceiling fan	2	Nature club & Cultural room	75	2	0.3
5	LED tube lights	14	Common room	18	2	0.504
6	Ceiling fans	25	Common room	75	2	3.75
7	LED tube lights	5	Special rooms	18	3	0.27
8	Ceiling fans	3	Special rooms	60	8	1.44
9	Computer	3	Special rooms	450	3	4.05
10	LED tube lights	21	Washrooms	12	9	2.26
11	Exhaust fans	4	Washrooms	60	9	2.16
12	LED tube lights	1	Humanities Coordinator	18	6	0.18
13	Ceiling fan	1	Humanities Coordinator	60	6	0.36
14	Split AC	2	Humanities Coordinator	400	4	3.2
15	Printer	1	Humanities Coordinator	450	1	0.45
16	LED lights	16	Common area	36	3	1.72
17	Computer	1	Humanities Coordinator	160	4	0.64
					Energy consumption	**21.584**

Gymkhana:

Sr. No	Equipment	No of	Location	Wattage	Usage per	Energy consumption

		units			day (Hrs)	(kWh)
1	Speaker	2	Gymkhana	200	0.5	0.2
2	LED panel light	22	Gymkhana	20	6	2.64
3	Lamp	21	Gymkhana	80	2	3.36
4	Split AC	14	Gymkhana	800	2	22.4
5	Ceiling fans	16	Gymkhana	75	6	7.2
6	LED tube lights	2	Gymkhana	18	4	0.14
7	Tube lights	1	Gymkhana	40	4	0.16
8	Exhaust fans	1	Gymkhana	60	4	0.24
					Energy consumption	**36.34**

Canteen:

Sr. No	Equipment	No of units	Location	Wattage	Usage per day (Hrs)	Energy consumption (kWh)
1	LED Panel lights	28	Canteen	20	9	5.04
2	Ceiling fans'	16	Canteen	75	9	10.8
3	Water cooler	1	Canteen	1550	9	13.95
4	Water purifier	1	Canteen	80	9	0.72
5	Tube lights	5	Canteen	40	9	1.8
6	Refrigerator	1	Canteen	1000	24	24
7	Refrigerator	1	Canteen	850	24	20.4
					Energy consumption	**76.71**

GROUND FLOOR

Area (on ground floor)	Energy consumption (kWh)
Common area & classrooms	21.584
Gymkhana	36.34
Canteen	76.71
Total energy consumption	**134.634**

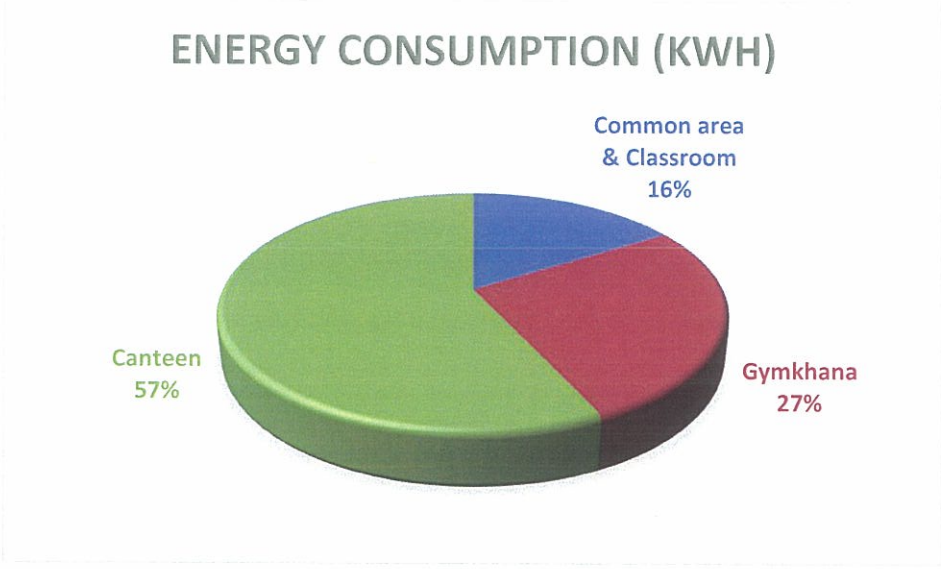

Fig 1: Electricity consumption per day on ground floor Old Building

First floor:

Sr. No	Equipment	No of units	Location	Wattage	Usage per day (Hrs.)	Energy consumption (kWh)
1	Tube lights	33	Classrooms	40	9	11.88
2	Ceiling fans	27	Classrooms	75	9	18.25
3	Tube lights	9	Special rooms	40	6	2.16
4	LED tube lights	4	Special rooms	18	8	0.57
5	LED panel lights	6	Special rooms	20	6	0.72
6	LED lights	1	Special rooms	6	8	0.048
7	Ceiling fans	9	Special rooms	75	8	5.4
8	Split AC	1	Special rooms	400	2	0.8
9	Split AC	3	Special rooms	800	2	4.8
10	Computer	4	Special rooms	450	10	18
11	Printer	1	Special rooms	140	1	0.14
12	Exhaust fans	1	Special rooms	60	4	0.24
13	Microwave oven	1	Special rooms	1200	1	1.2
14	Refrigerator	1	Special rooms	553	24	13.27
15	Water purifier	1	Special rooms	575	9	5.17
					Energy consumption	**82.648**

Admin section:

Sr. No	Equipment	No of units	Location	Wattage	Usage per day (Hrs)	Energy consumption (kWh)
1	Tubelights	42	Admin office	40	9	15.12
2	LED tubelights	3	Admin office	18	9	0.48
3	Ceiling fans	17	Admin office	75	9	11.45
4	Computer	40	Admin office	450	8	144
5	Printer	15	Admin office	160	6	14.4
6	Split AC	7	Admin office	800	6	33.6

7	Window AC	2	Admin office	1000	6	12
8	Server	1	Admin office	660	24	15.84
9	Wall fans7	2	Admin office	60	10	1.2
10	Photocopy machine	3	Admin office	250	2	1.5
11	LED panel lights	9	Admin office	20	9	1.62
12	LED focus lights	6	Admin office	6	9	0.32
13	LED spot lights	10	Admin office	8	9	0.72
14	Split AC	1	Principal office	3500	6	21
15	LED panel lights	8	Principal office	20	9	1.44
16	LED Tubelights	7	Principal office	18	1	0.126
17	Fridge	1	Principal office	200	9	1.8
	Microwave oven	1	Staffroom	1200	1	1.2
					Energy consumption	**277.816**

Common area:

Sr. No	Equipment	No of units	Location	Wattage	Usage per day (Hrs)	Energy consumption (kWh)
1	Tube lights	27	Common area	40	2	2.16
2	Ceiling fans	1	Common area	75	9	0.67
3	Water cooler	1	Common area	575	12	6.9
4	Exhaust fans	6	Common area	60	9	3.24
5	LED lights	4	Common area	12	9	0.432
	Exhaust fans	1	Common area	20	9	0.18
					Energy consumption	**13.58**

Computer Lab:

Sr. No	Equipment	No of units	Location	Wattage	Usage per day (Hrs)	Energy consumption (kWh)
1	Tube lights	34	Computer lab	40	9	12.24
2	CFL	4	Computer lab	18	9	4.16
3	Ceiling fans	11	Computer lab	75	9	7.42
4	Window AC	2	Computer lab	1000	9	18

5	Split AC	1	Computer lab	800	9	7.2
6	Computer	34	Computer lab	400	9	122.4
7	Computer	41	Computer lab	450	9	166.05
8	Printer	1	Computer lab	180	9	1.62
					Energy consumption	**339.09**

Library:

Sr. No	Equipment	No of units	Location	Wattage	Usage per day (Hrs)	Energy consumption (kWh)
1	Tubelights	55	Library	40	8	1.76
2	Ceiling fans	33	Library	75	8	19.8
3	Split AC	4	Library	800	6	19.2
4	Computer	27	Library	450	8	97.2
5	LED tubelights	10	Library	18	8	1.44
6	Window AC	1	Library	500	6	3
7	Kindle	10	Library	10	6	0.6
8	Scanner	3	Library	120	4	1.44
9	Printer	4	Library	160	4	2.56
10	LED panel lights	1	Library	12	8	0.096
11	Bar code printer	1	Library	60	2	0.12
12	Microwave oven	1	Library	1600	0.5	0.8
13	Refrigerator	1	Library	550	24	13.2
					Energy consumption	**161.216**

FIRST FLOOR

Area (On first floor)	Energy consumption
Common area & classrooms	96.228
Admin section	277.816
Library	161.216
Computer lab	339.09
Total energy consumption	**874.342**

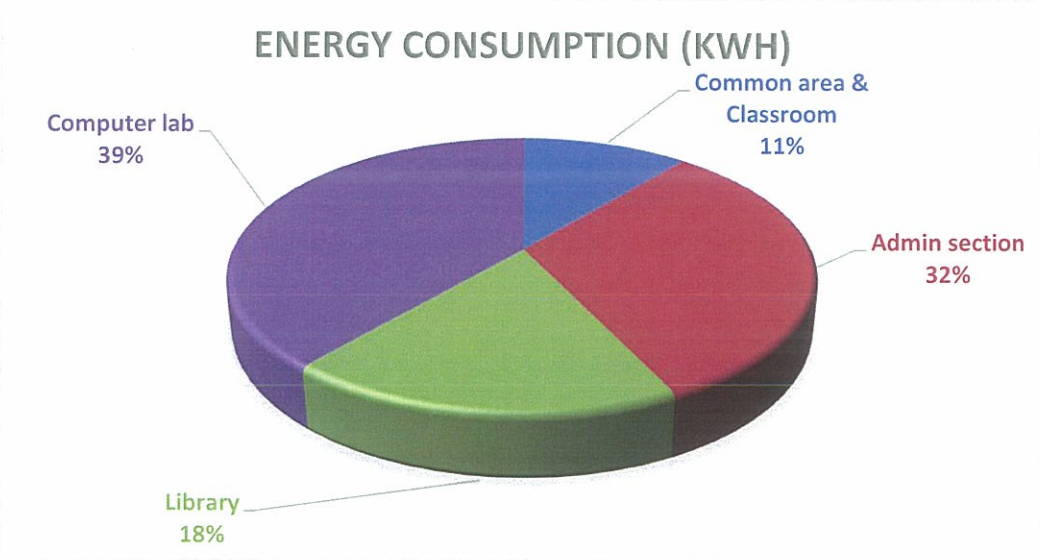

Fig 2: Electricity consumption per day on first floor Old Building

Second floor:

Sr. No	Equipment	No of units	Location	Wattage	Usage per day (Hrs)	Energy consumption (kWh)
1	Tube lights	18	Common area	40	9	6.48
2	Ceiling fans	1	Common area	75	8	0.6
3	Water cooler	1	Common area	575	12	6.9
4	Tubelights	48	Classrooms	40	8	15.36
5	Fans	43	Classrooms	75	8	25.8
6	LED tubelights	2	Classrooms	18	9	0.324
	Tubelights	1	Special rooms	40	9	0.36
8	Ceiling fans	6	Special rooms	75	8	0.6
9	Split AC	2	Special rooms	600	6	7.2
10	LED tubelights	1	Special rooms	18	8	0.144
11	Computer	27	Special rooms	450	6	72.9
12	LED panel	12	Special rooms	20	8	1.92
13	Window AC	2	Special rooms	1000	6	12
14	Split AC	1	Special rooms	400	6	2.4
15	Tubelights	6	Washrooms	40	8	1.92
16	Exhaust fans	6	Washrooms	60	9	3.24
					Energy consumption	**158.14**

SECOND FLOOR

Area (On Second floor)	Energy consumption
Common area	13.98
Special room	97.52
Class room	41.48
Wash room	**5.16**
Total energy consumption	**158.14**

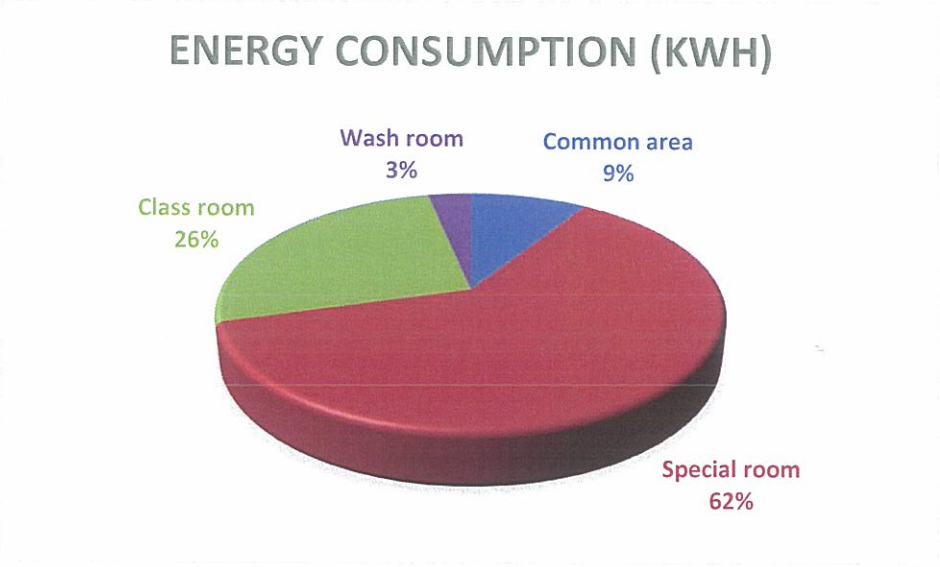

Fig 3: Electricity consumption per day on Second floor Old Building

Third floor:

Sr. No	Equipment	No of units	Location	Wattage	Usage per day (Hrs)	Energy consumption (kWh)
1	Tubelights	16	Common area	40	8	5.12
2	Ceiling fans	1	Common area	75	8	0.6
3	Water cooler	2	Common area	575	12	13.8
4	Tubelights	48	Classrooms	40	9	17.28
5	Fans	72	Classrooms	75	9	48.6
	LED tubelights	26	Classrooms	18	9	4.21
7	Tubelights	8	Washrooms	40	9	2.88
8	Exhaust fans	6	Washrooms	60	6	2.16
9	Tubelights	2	Special rooms	40	8	0.64
10	Ceiling fans	10	Special rooms	75	8	6
11	Split AC	2	Special rooms	400	6	4.8
12	LED tubelights	1	Special rooms	18	8	0.144
13	LED panel	15	Special rooms	20	8	2.4
14	Window AC	2	Special rooms	500	6	6
15	Split AC	2	Special rooms	600	6	7.2
					Energy consumption	**121.83**

THIRD FLOOR

Area (On Third floor)	Energy consumption
Common area	19.52
Special room	27.184
Class room	70.09
Wash room	5.04
Total energy consumption	**121.83**

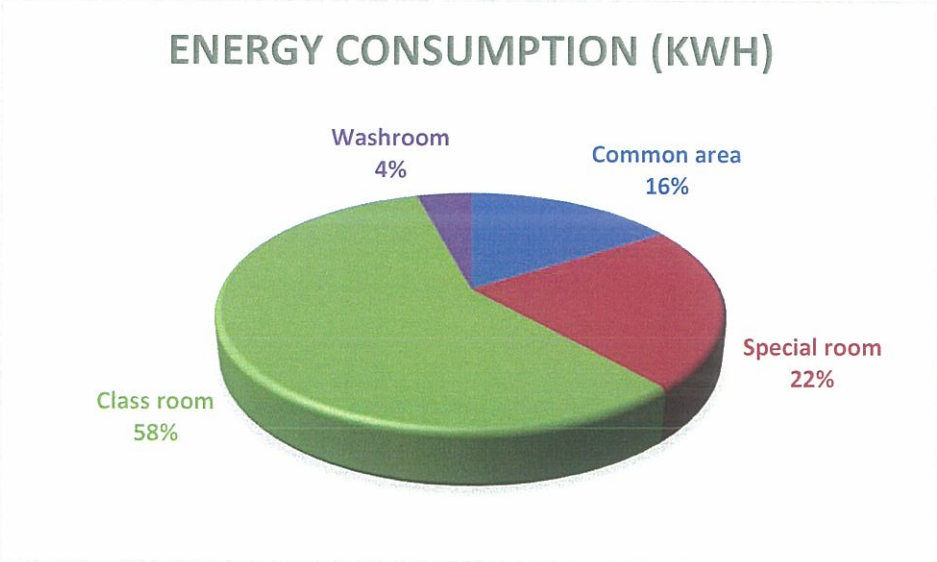

Fig 4: Electricity consumption per day on Third floor Old Building

Fourth floor:

Sr. No	Equipment	No of units	Location	Wattage	Usage per day (Hrs)	Energy consumption (kWh)
1	Tubelights	6	Common area	40	8	1.92
2	Tubelights	18	Classrooms	40	8	5.76
3	Fans	24	Classrooms	75	8	14.4
4	LED tubelights	10	Classrooms	18	8	1.44
					Energy consumption	**23.52**

FORTH FLOOR

Area (On Second floor)	Energy consumption
Common area	1.92
Classroom	21.6
Total energy consumption	**23.52**

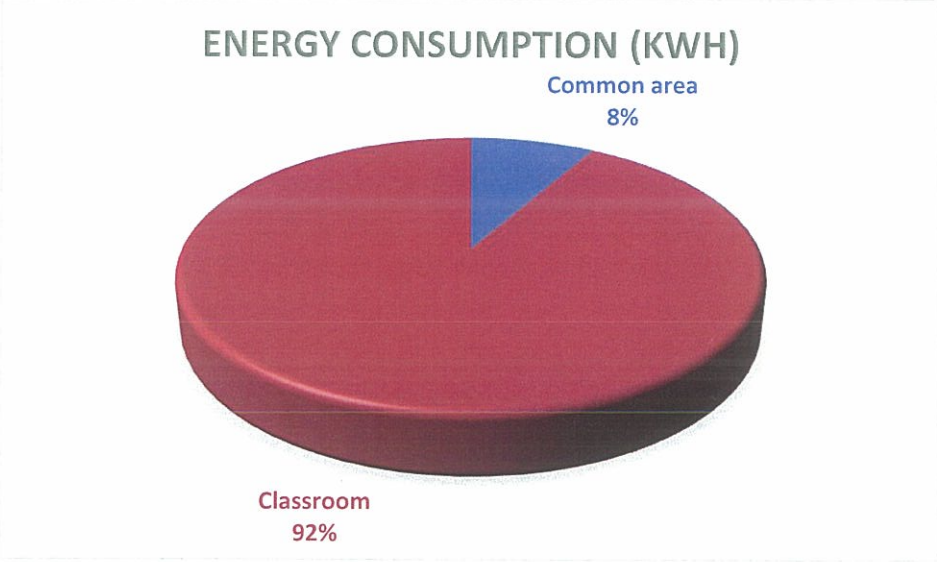

Fig 5: Electricity consumption per day on Fourth floor Old Building

Fifth floor:

Sr. No	Equipment	No of units	Location	Wattage	Usage per day (Hrs)	Energy consumption (kWh)
1.	Tubelights	5	Common area	40	8	1.6
2.	Tubelights	21	Classrooms	40	8	6.72
3.	Fans	21	Classrooms	75	8	12.6
4.	LED tubelights	4	Classrooms	18	8	0.57
					Energy consumption	**21.49**

FIFTH FLOOR

Area (On Second floor)	Energy consumption
Common area	1.6
Classroom	19.89
Total energy consumption	**21.49**

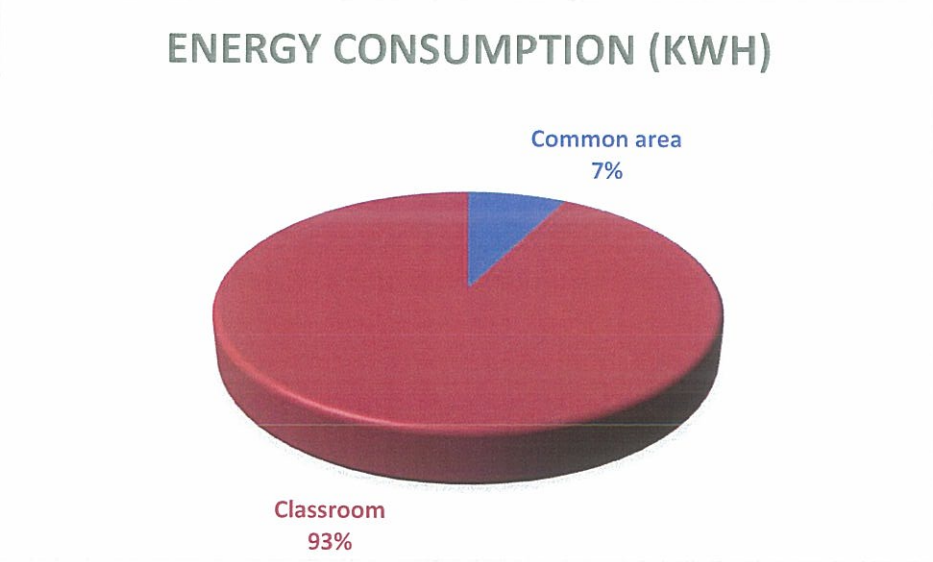

Fig 6: Electricity consumption per day on Fifth floor Old Building

Floor	Energy consumption (kWh)
Ground	134.63
First	82.648
Second	158.14
Third	121.83
Fourth	23.52
Fifth	21.49
Total	**542.25**

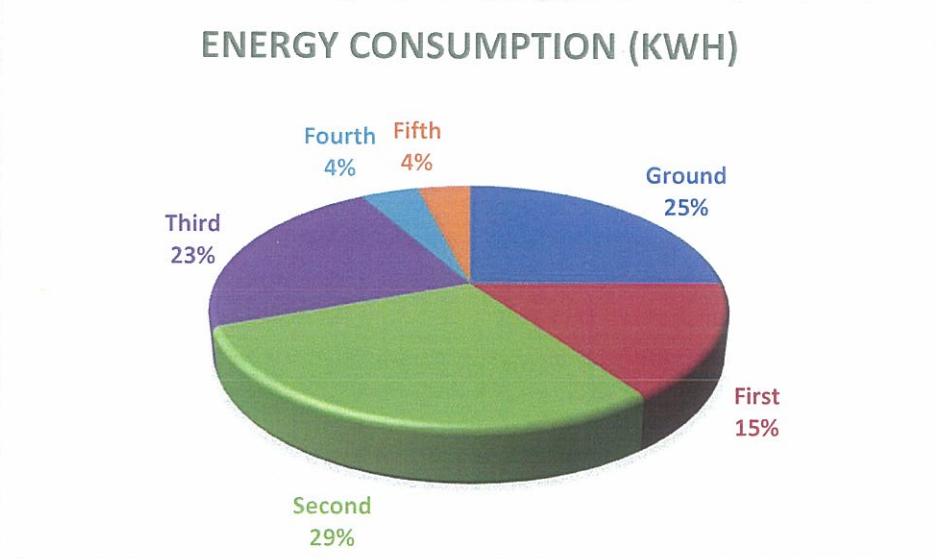

Fig 7: Electricity consumption per day total floors of Old Building

3.2Floor wise energy consumption (New building)

Ground floor:

Sr. No	Equipment	No of units	Wattage	Usage per day (Hrs)	Energy consumption (kWh)
1	LED Light	145	18	9	23.49
2	LED 22 Tube light	3	18	9	0.48
3	Water cooler	1	1660	10	16.6
4	Exhaust fan	2	880	6	10.56
	Fan	10	75	8	6
6	Computer	16	450	6	43.2
7	Printer	4	150	4	2.4
8	Photocopy machine	3	250	4	3
9	LCD	3	57	2	0.342
10	AC	5	1200	6	36
				Energy consumption	**142.07**

GROUND FLOOR

Equipment (On Ground floor)	Energy consumption
LED	23.97
Fan	16.56
Equipment's / Appliances	36
AC	65.54
Total energy consumption	**142.07**

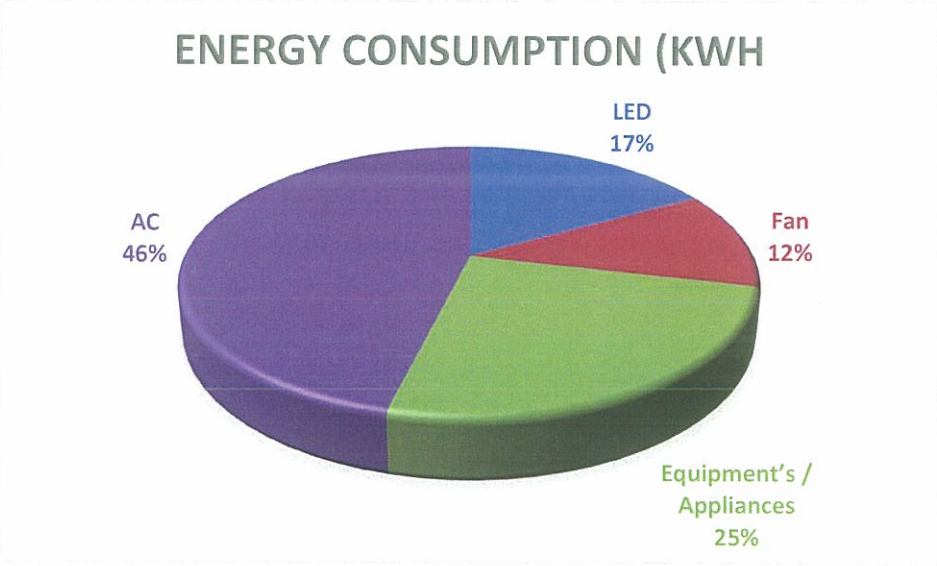

Fig 8: Electricity consumption per day on Ground floor New Building

First floor:

Sr. No	Equipment	No of units	Wattage	Usage per day (Hrs)	Energy consumption (kWh)
1	LED Light	99	18	8	14.25
2	Led 24 Tubelight	0	18	8	0
3	Water cooler	0	1660	10	0
4	Exhaust fan	0	880	8	0
5	Fan	23	75	9	15.52
6	Computer	9	450	6	24.3
7	Printer	0	160	4	0
8	Photocopy machine	0	250	1	0
9	LCD TV	1	57	2	0.114
10	AC	24	1200	6	172.8
11	Server	1	660	24	15.84
12	LED TV	2	20	8	0.32
				Energy consumption	**243.144**

FIRST FLOOR

Equipment (On First floor)	Energy consumption
LED	14.25
Fan	15.52
AC	172.8
Equipment's/ Appliances	24.734
Server	15.84
Total energy consumption	**243.144**

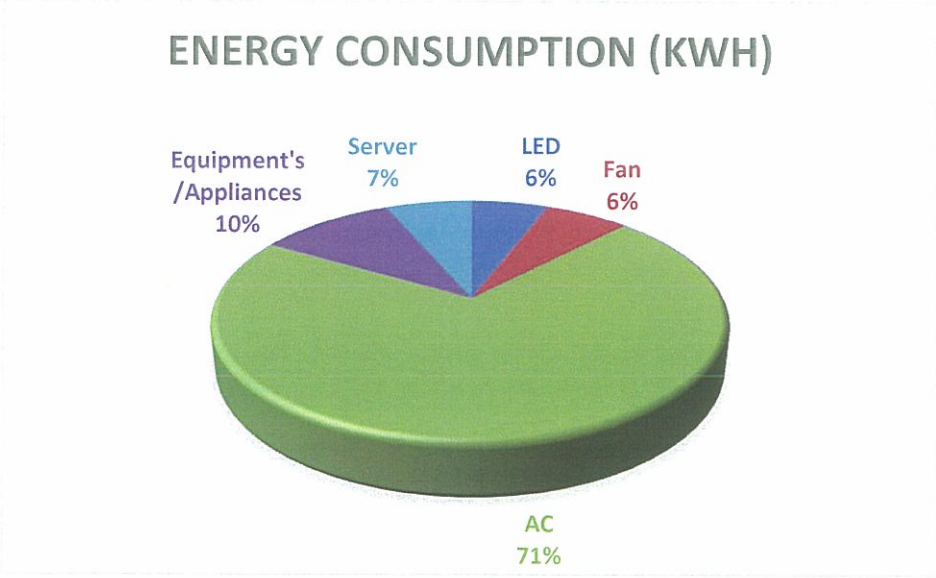

Fig 9: Electricity consumption per day on First floor New Building

Second floor

Sr. No	Equipment	No of units	Wattage	Usage per day (Hrs)	Energy consumption (kWh)
1	LED Light	154	18	8	22.17
2	Led 26 Tubelight	9	18	8	1.29
3	Water cooler	1	1660	10	1.66
4	Exhaust fan	2	880	6	10.56
5	Fan	19	75	8	11.4
6	Computer	37	450	6	99.9
7	Printer	1	160	2	0.32
8	Photocopy machine	0	250	1	0
9	LCD TV	2	57	4	0.456
10	AC	1	1200	5	6
11	Server	1	660	24	15.84
12	LED TV	0	20	8	0
13	Laptop	6	45	8	2.16
				Energy consumption	**171.756**

SECOND FLOOR

Equipment (On Second floor)	Energy consumption
LED	23.46
Fan	21.96
AC	6
Equipment's/ Appliances	104.496
Server	15.84
Total energy consumption	**171.756**

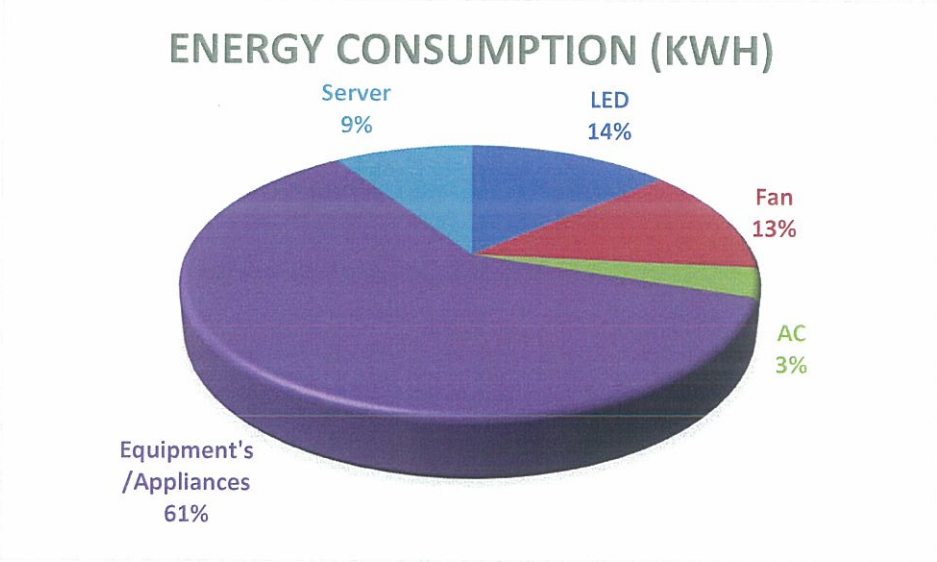

Fig 10: Electricity consumption per day on Second floor New Building

Third floor:

Sr. No	Equipment	No of units	Wattage	Usage per day (Hrs)	Energy consumption (kWh)
1	LED Light	159	18	9	25.75
2	Led 28Tubelight	0	18	9	0
3	Water cooler	1	1660	9	14.94
4	Exhaust fan	2	880	6	10.56
5	Fan	19	75	8	11.4
6	Computer	1	450	4	1.8
7	Printer	1	160	2	0.32
8	Photocopy machine	1	250	1	0.25
9	LCD TV	1	57	8	0.456
10	AC	1	1200	6	0.72
11	Server	0	660	24	0
12	LED TV	0	20	8	0
13	Laptop	0	45	8	0
				Energy consumption	**66.19**

THIRD FLOOR

Equipment (On Second floor)	Energy consumption
LED	25.75
Fan	21.96
AC	0.72
Equipment's/ Appliances	17.766
Server	0
Total energy consumption	**66.19**

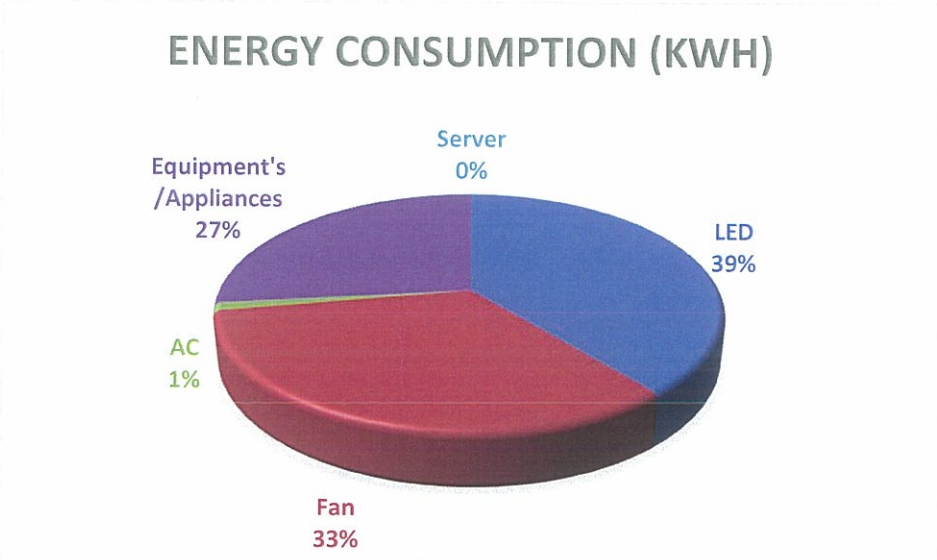

Fig 11: Electricity consumption per day on Third floor New Building

Fourth floor:

Sr. No	Equipment	No of units	Wattage	Usage per day (Hrs)	Energy consumption (kWh)
1	LED Light	187	18	8	26.92
2	Led 30Tubelight	2	18	8	0.288
3	Water cooler	1	1660	10	16.6
4	Exhaust fan	2	880	6	10.56
5	Fan	21	75	8	12.6
6	Computer	37	450	4	66.6
7	Printer	0	160	2	0
8	Photocopy machine	0	250	1	0
9	LCD TV	1	57	8	0.45
10	AC	1	1200	6	7.2
11	Server	1	660	24	15.84
12	LED TV	0	20	8	0
13	Laptop	0	45	8	0
				Energy consumption	**157.058**

FOURTH FLOOR

Equipment (On Second floor)	Energy consumption
LED	27.208
Fan	23.16
AC	7.2
Equipment's/ Appliances	83.65
Server	15.84
Total energy consumption	**157.058**

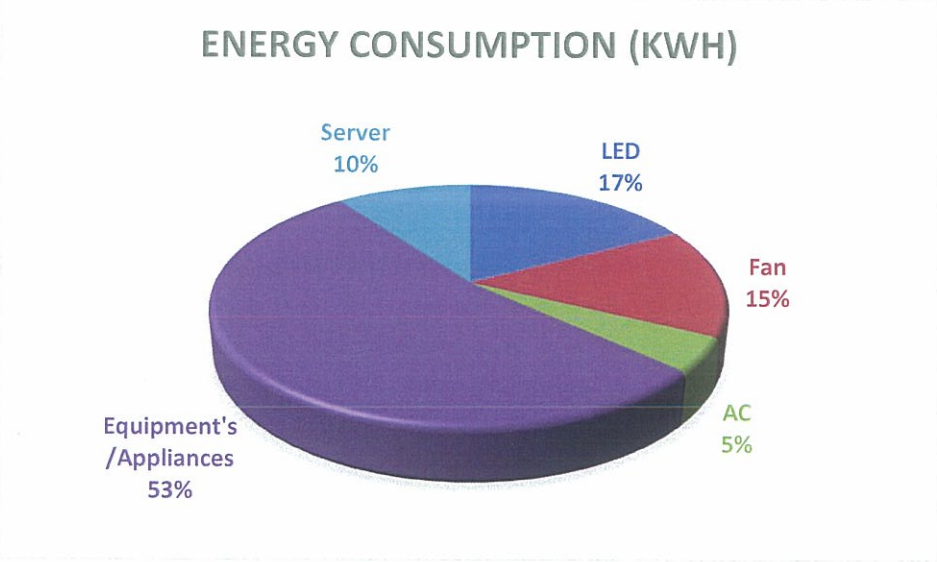

Fig 12: Electricity consumption per day on Fourth floor New Building

Fifth floor:

Sr. No	Equipment	No of units	Wattage	Usage per day (Hrs)	Energy consumption (kWh)
1	LED Light	180	18	8	25.92
2	Led Tubelight	0	18	8	0
3	Water cooler	1	1660	10	16.6
4	Exhaust fan	2	880	6	10.56
5	Fan	20	75	8	12
6	Computer	2	450	6	5.4
7	Printer	1	160	4	0.64
8	Photocopy machine	0	250	1	0
9	LCD TV	2	57	8	0.912
10	AC	1	1200	6	7.2
11	Server	0	660	24	0
12	LED TV	0	20	8	0
13	Laptop	0	45	8	0
14	Microwave oven	1	1200	0.5	0.06
15	Refrigerator	1	200	24	4.8
				Energy consumption	**84.09**

FIFTH FLOOR

Equipment (On Second floor)	Energy consumption
LED	25.92
Fan	22.56
AC	7.2
Equipment's/ Appliances	28.412
Server	0
Total energy consumption	**84.09**

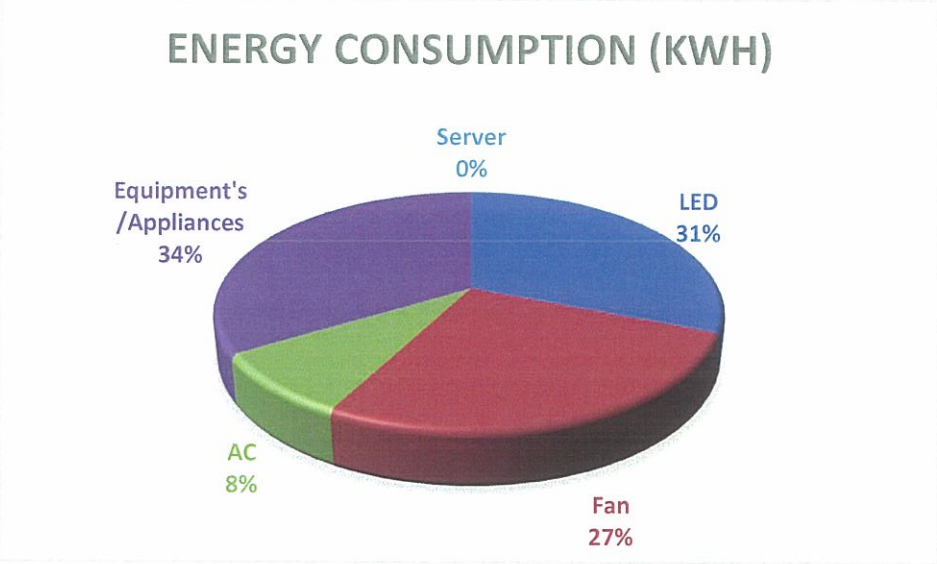

Fig 13: Electricity consumption per day on Fifth floor New Building

Sixth floor:

Sr. No	Equipment	No of units	Wattage	Usage per day (Hrs)	Energy consumption (kWh)
1	LED Light	187	18	8	26.92
2	Led Tubelight	0	18	8	0
3	Water cooler	1	1660	10	16.6
4	Exhaust fan	2	880	6	10.56
5	Fan	33	75	8	19.8
6	Computer	37	450	6	99.9
7	Printer	0	160	4	0
8	Photocopy machine	0	250	1	0
9	LCD TV	1	57	8	0.456
10	AC	1	1200	6	7.2
11	Server	1	660	24	15.84
12	LED TV	0	20	8	0
13	Laptop	0	45	8	0
14	Microwave oven	0	1200	0.5	0
15	Refrigerator	0	200	24	0
				Energy consumption	**197.27**

SIXTH FLOOR

Equipment (On Second floor)	Energy consumption
LED	26.92
Fan	30.36
AC	7.2
Equipment's/ Appliances	116.956
Server	15.84
Total energy consumption	**197.27**

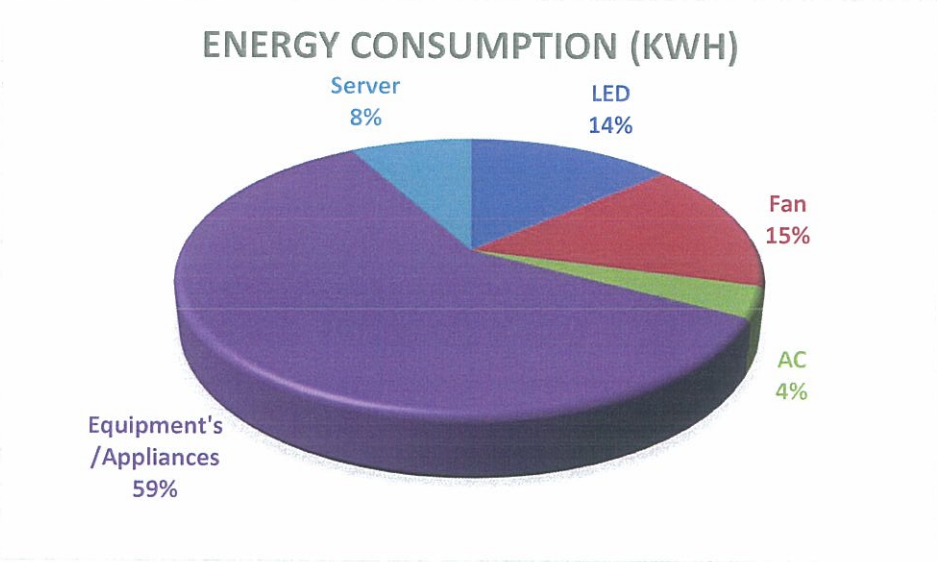

Fig 14: Electricity consumption per day on Sixth floor New Building

Floor	Energy consumption (kWh)
Ground	142.07
First	243.144
Second	171.756
Third	66.19
Fourth	157.058
Fifth	84.09
Sixth	197.27
Total	**1061.578**

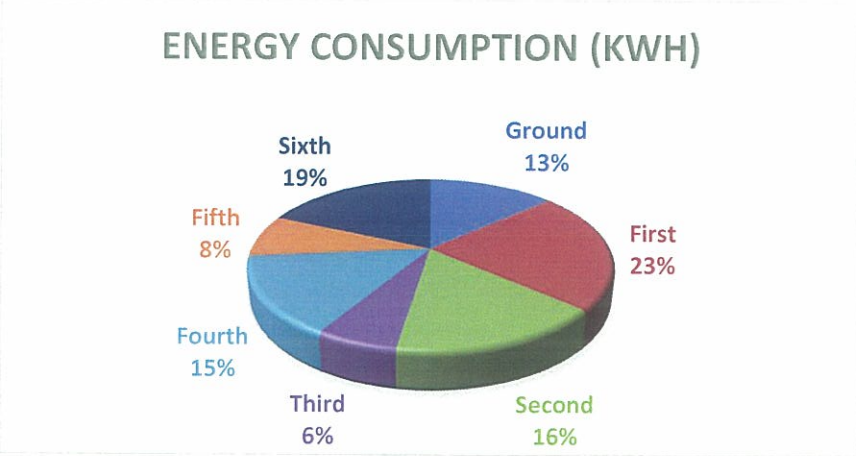

Fig 15: Electricity consumption per day on total floor New Building

Sr. No	Equipment	No of units	Location	Wattage	Usage per day (Hrs)	Energy consumption (kWh)
1	Elevator	5	New building and old building	7500	3	112.5

*Elevator data has been taken from service provider website.

4. Analysis:

4.1 The share of annual lighting power requirements met through LED bulbs:
36.5% of the current lighting requirement of the old building is met through LED bulbs

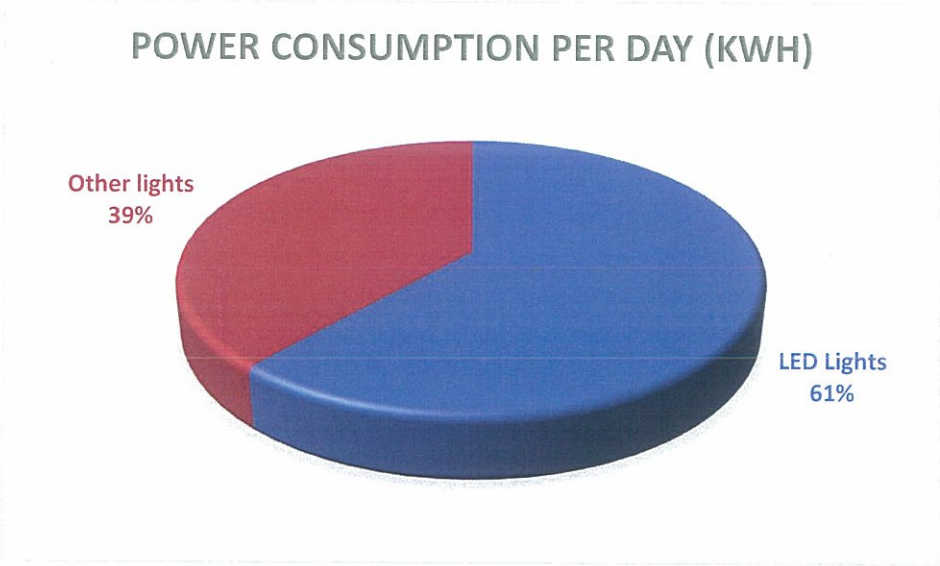

Fig 16: Share of annual lighting power requirement met through LEDs.

100% of the lighting requirement of the new building is met through LED bulbs.

4.2 The utilities and their power consumption on a regular basis has been depicted in the chart.

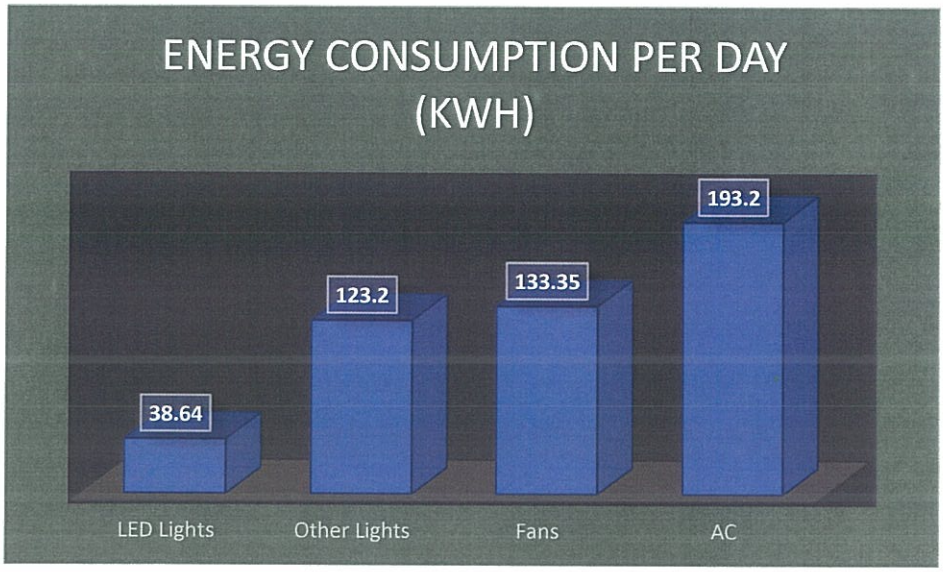

Fig 17: Power consumption by utility equipment's in old building.

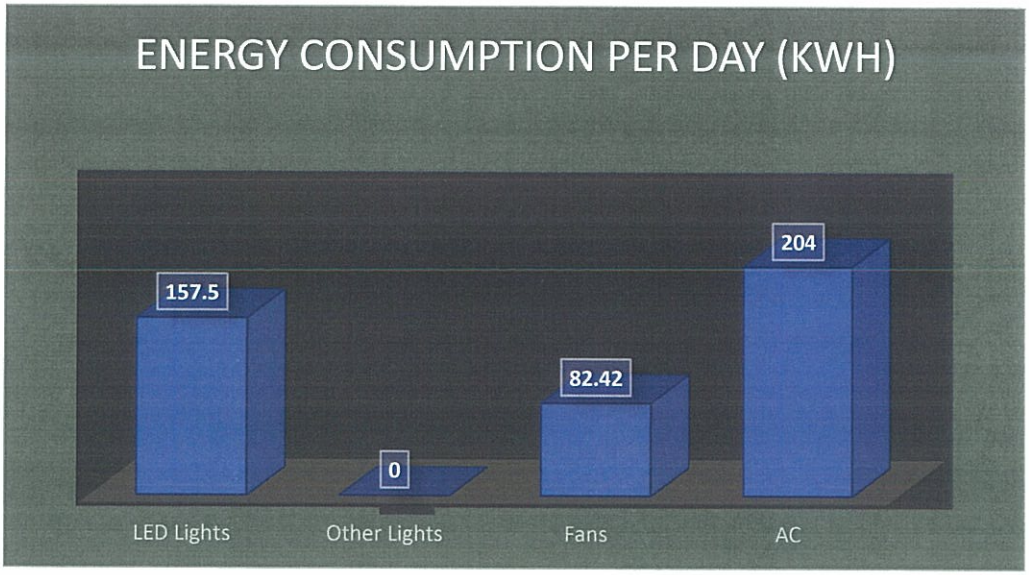

Fig 18: Power consumption by utility equipment's in new building.

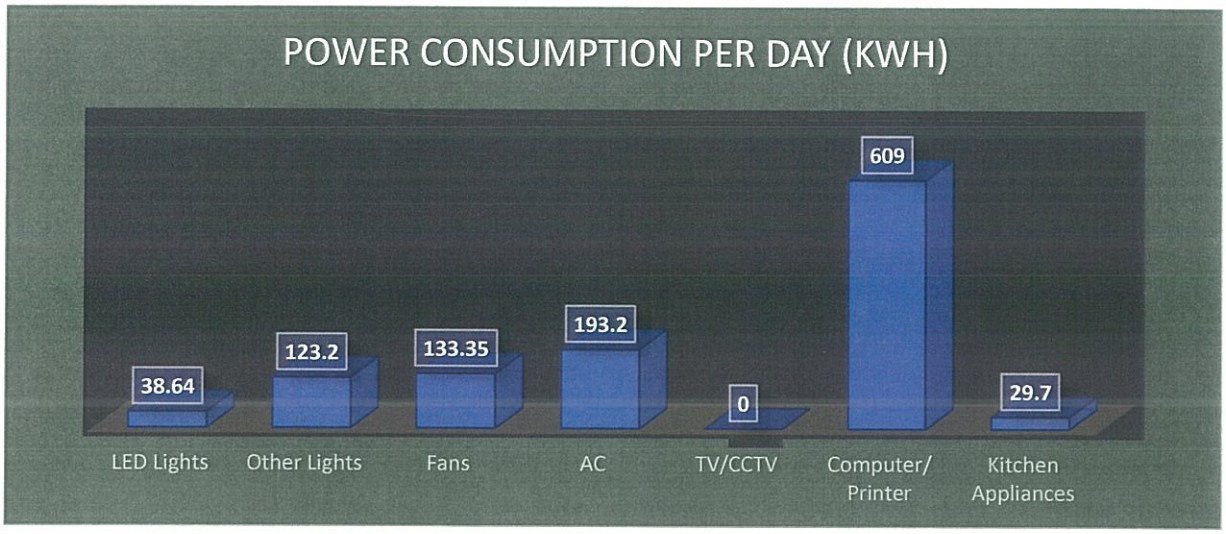

Fig 19: Major power consuming equipment's: Old building

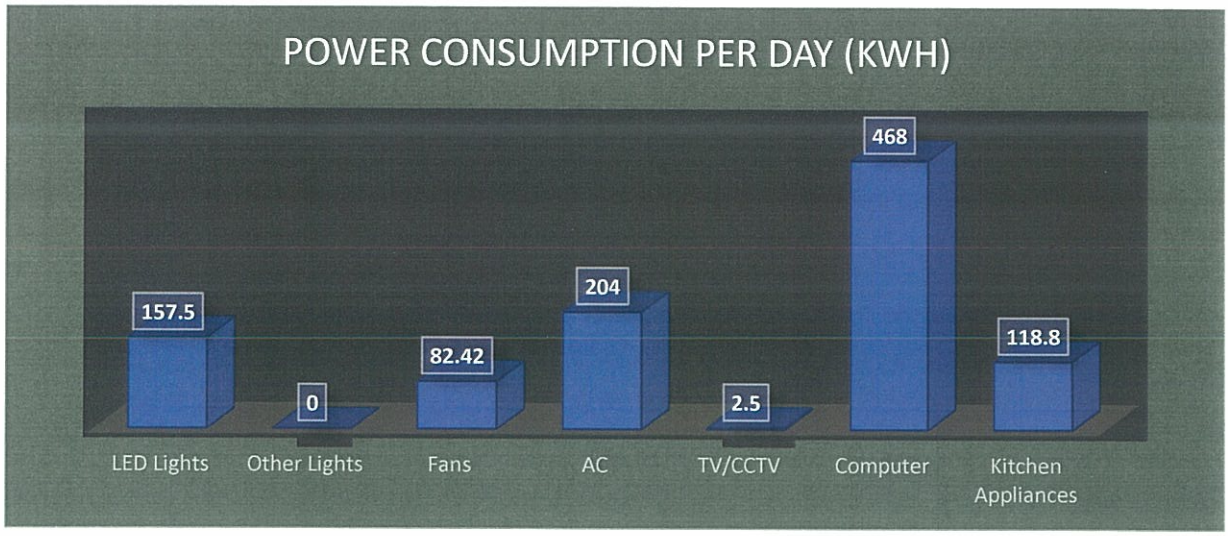

Fig 20: Major power consuming equipment's: New building

4.3Equipment demand for electricity.

The maximum energy is consumed by computers in both the old and the new building and the least energy is spent on operations of kitchen appliances for students and staff welfare. Air conditioning is the second most energy intensive operation as indicated by the numbers. The air conditioning requirement for the new building is 32% higher compared to the old building mainly due to the centralized AC in self- finance premises.

% Power consumption by high demand equipment's (Old building)

High electric demand equipment's.	Power consumption per day (kWh)	Percentage of electricity consumed
LED lights	38.64	3.10%
Other lights	123.2	9.87%
Fans	254	20.35%
A/C	193.2	15.48%
TV/CCTV	0	0
Computer/ Printer	609	48.80%
Kitchen appliances	29.7	2.38%

% Power consumption by high demand equipment's (New building)

High electric demand equipment's.	Energy consumption per day (kWh)	Percentage of electricity consumed
LED lights	157.5	15.24%
Others Lights	0	0
Fans	82.42	7.98%
AC	204	19.74%
CCTV/LCD's	2.50	0.24%
Computers/ Printer	468	45.30%
Kitchen Appliances	118.8	11.50%

4.4 Percentage of power requirement of the institution met by renewable energy sources.

Solar system of 33KVA has only installed on the terrace of the old building. **5% of the annual power requirement** is met through renewable sources of energy. The college premise also houses a composting unit for dealing with all of its organic waste.

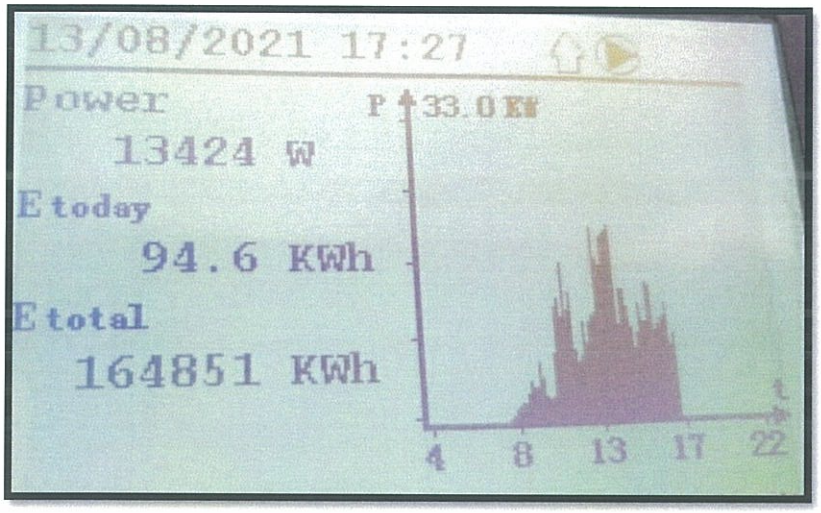

Fig 21: Solar panels meter reading

As per the data collected, 94.6 kWh per day is the average production by the installed solar panels. Approximately 34529 kWh is produced annually, of which 23391kWh is consumed and Approximately 11138kWh is excess production supplied to the grid.

Sr. No	Equipment	No of units	Location	System size	Average annual production (kWh)
1	Solar panels	96	Terrace	26.4KW	≈34529

Annual electricity consumption (kWh)	500448
Annual electricity generation through solar (kWh)	≈34529
% power supply by solar panels	5.620488855

4.5 Alternate energy

4.5.1 Total power generated through solar panels- ≈34529 kWh

4.5.2 Power consumed through solar- 23391 kWh.

4.5.3 Energy gained- Data not found
Energy consumed- 23391kWh

4.5.4 Electricity bill analysis- The connection of old building is Low Tension VI category and the connection of new building is High Tension IX category. The per unit cost of old building is 11.39 INR and the per unit cost of new building is 17.22 INR. The average consumption of new building is around 12700 units and old building is around 6500 units. The lowest energy consumption is during the month of April and May and the highest energy consumption is during the month of August and September.

4.5.5 Total units consumed by each meter:

Account no	Total units
151319266	22334
150566515	29998
150522864	1220
100111588	4780
150445132	50061

4.5.6 Total amount saved through alternate source of energy-2,66,423 INR/year

4.5.7 Total power requirement- Average power requirement for both premises combined is 20000 units.

4.5.8 Total no. of meters- 5

4.5.9 Cost of operation- 12000 INR/year

4.6 LED lights

4.6.1 Power consumed by LED lights- 5,099.64 units/month

4.6.2 Total lighting through other sources- 409 installations

4.6.3 Total power required for lighting- 8303 units/month

4.6.4 Total number of LED lights - 1401 installations

PRINCIPAL
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B. K. Shroff College of Arts &
M. H. Shroff College of Commerce
Bhulabhai Desai Road,
Kandivli (West), Mumbai-67

HEAD
CRITERIA – VII
Institutional Values
and Best Practices

KES's SHROFF COLLEGE OF ARTS & COMMERCE KANDIVALI (W), MUMBAI-67.

5. Recommendations:

1) Use 5 stars rating electrical equipment for entire institution will help to save energy on power expenses.
2) Standardization of the vendor for procurement of AC's and other high consumption equipment's will help the institute for better maintain and limit its power consumption.
3) Opting for solar power in new building with a 100 kVA generation capacity will help the institute to cut down on at least 33% of the overall power consumption.
4) Monitoring the losses in common areas and cutting down energy wastage by installing a sensor based lighting system will help to limit the overall energy expenditure.
5) Regular maintenance of all the electrical equipment like A/C and refrigerator is highly recommended for keeping a check on the rising electricity bills.
6) Installing dimmer switches in auditorium and offices will help cut down on energy wastage.
7) Changing/Replacing/Cleaning air filters at regular intervals will help to save electricity.
8) Reduce microwave use as much as possible.
9) Installing energy efficient windows will help to minimize energy losses.
10) Replacing filament bulb, CFL and other bulbs and tubes to LED will cut down on the electricity bills.
11) Unplug appliances when not in use to save up to 2% of energy.
12) Use sleep mode in computers and Televisions to save up to 1% of energy.
13) Localizing the meter on every floor will help to track and cut down on energy losses.

NOTE: **All the information mentioned in the report are provided through Kandivli Education Society's BK Shroff College of Arts and MH Shroff College Of Commerce by verbal communication and relevant documents.**