



**Energy Audit Report**  
**Vishwaniketan's Institute of Management**  
**Entrepreneurship and Engineering Technology**  
**Khalapur, Year 2020-21**



**ENERGY AUDIT REPORT**  
**CONSULTATION REPORT**



**Vishwaniketan's Institute of Management**  
**Entrepreneurship and Engineering Technology**

Kumbhivali, Tal, Khalapur, Maharashtra 410202

PREPARED BY

**EMPIRICAL EXERGY PRIVATE LIMITED**

Flat No. 201, Om Apartment, 214 Indrapuri Colony,

Bhawarkuwa, Indore – 452 001 (M. P.), India

0731-4948831, 7869327256

Email ID: [eempirical18@gmail.com](mailto:eempirical18@gmail.com)

[www.eeplgroups.com](http://www.eeplgroups.com)

(2020-21)

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## **ACKNOWLEDGEMENT**

**Empirical Exergy Private Limited (EEPL), Indore** takes this opportunity to appreciate & thank the management of **Vishwaniketan's Institute of Management Entrepreneurship and Engineering Technology (VIMEET) Khalapur**, for giving us an opportunity to conduct energy audit for the Institute .

We are indeed touched by the helpful attitude and co-operation of all faculties and technical staff, who rendered their valuable assistance and co-operation the course of study.



**Rajesh Kumar Singadiya**

**(Director)**

M.Tech (Energy Management), PhD (Research Scholar)  
Accredited Energy Auditor [AEA-0284]  
Certified Energy Auditor [CEA-7271]  
(BEE, Ministry of Power, Govt. of India)  
Empanelled Energy Auditor with MPUVN, Bhopal M.P.  
Lead Auditor ISO50001:2011 [EnMS) from FICCI, Delhi  
Certified Water Auditor (NPC, Govt of India)  
Chartered Engineer [M-1699118], The Institution of Engineers (India)  
Member of ISHRAE [58150]

## EXECUTIVE SUMMARY

The executive summary of the energy audit report furnished in this section briefly gives the identified energy conservation measures and other recommendation during the project that can be implemented in a phased manner to conserve energy, increase productivity inside the Institute campus.

### **ENERGY CONSERVATION IMPLEMENTED PROJECT:**

Institute management has implemented following energy conservation project in Institute :  
**It's all appreciable.**

#### **100 KWp Solar PV roof top systems:**

- ✚ Institute has installed 100 kWp on grid Solar PV System. Solar system is generated total unit 20,980 kWh in month of Feb-2022.

#### **Lighting System:**

- ✚ 69 no of conventional down lighter (CFL) by (9 Watt) energy efficient LED light.
- ✚ 20 no of conventional down lighter (CFL) by (5 Watt) energy efficient LED light.
- ✚ 50 no of Conventional (T-12) tube Light 40Watt by 20 Watt Energy efficient (T-5) LED light
- ✚ 30 No of (2 × 2) square fitting (72 Watt CFL)) by ( 1 ×1 ) square fitting ( 36 Watt) LED Lighting in office and conference area.
- ✚ 12 No of (2 × 2) square fitting (36Watt CFL)) by ( 1 ×1 ) square fitting ( 15 Watt) LED Lighting in office and conference area.
- ✚ Installation of 30 Watt LED Street Light by replacement of convention HPSVL

## AREAS FOR IMPROVEMENT

### Lighting System:

- ✚ There is still good potential for replacement of conventional lighting (CFL by LED lighting) (CFL downlighter by LED down lighter) (36 X 2 =72-Watt square fixture by 36-Watt LED Square Fitting) by energy efficient lightings. Expected energy saving and simply payback period is subject of load factor and annual operating hours.
- ✚ Installation of **“Timer control on focus light and street lighting”** in Institute campus recommended for energy saving in the campus.

### Ceiling Fan and Exhaust Fan:

- ✚ Replacement of “conventional ceiling fan (60-Watt ,80 Watt)” by energy efficient star rated fan or BLDC based energy efficient fan (28 Watt) have great potential for energy saving.
- ✚ Replacement of “conventional exhaust fan (160 Watt and 250 Watt)” by energy efficient star rated fan or BLDC based energy efficient Fan (20 to 40 Watt) have great potential for energy saving.
- ✚ Expected energy saving and simply payback period is subject of load factor and annual operating hours. Expected energy saving and simply payback period is subject of load factor and annual operating hours.

### Air Conditioning System:

- ✚ It is recommended to replaced old modal window and Sprit AC by BEE star rated AC

### IOT based energy monitoring system:

- ✚ Installation of “Cloud based (IoT based) energy monitoring system” at main feeder.

### Energy Management Workshop and Training:

- ✚ Develop energy management policies for Institute . Establish a procurement policy that is energy saving and eco-friendly.
- ✚ Conduct awareness and training programs for faculty, student and non-teaching staffs. Conduct seminars, workshops and exhibitions on energy management education.

## CHAPTER-01 INTRODUCTION

### 1.1 About Institute:-

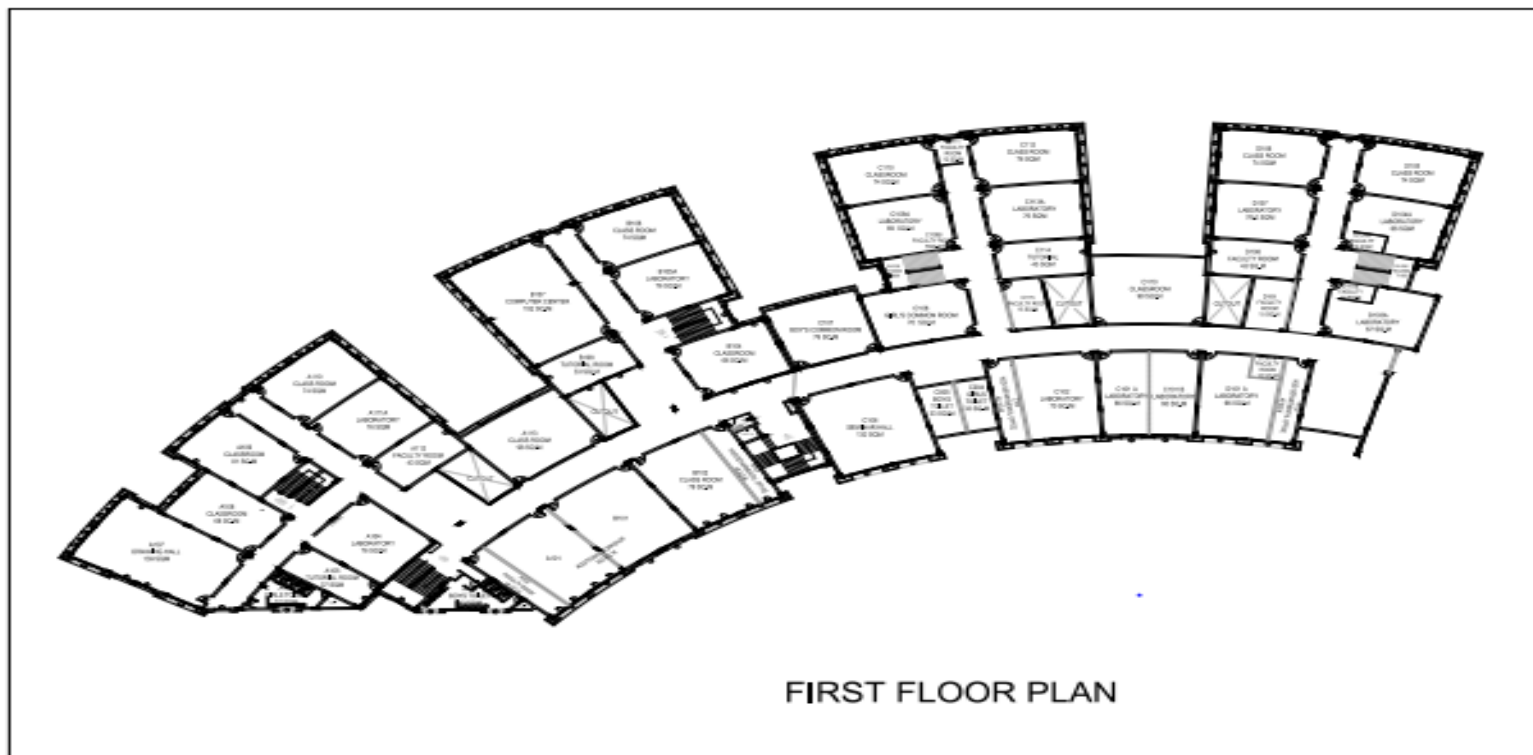
The society is mainly established for the Educational, Cultural, Artistic, Sport related (Sporting), Social, Medical and Charity related development of the people. Vishwaniketan is poised to become one of leading institutions in India. Vishwaniketan is achieve new milestones in undergraduate Engineering Graduation, Architecture and design as a group of extraordinary educationists. Vishwaniketan, in association with CTIF (Centre for Tele infrastructure) also offers its students international fellowships at top notch international universities in the summer vacation where they are trained by the best teachers from around the world.







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PROJECT:  
PROPOSED ENGG & MANAGEMENT INSTITUTE  
OF VISHWANIKETAN AT KUMBHIVALI  
MAHARASHTRA

SURESH S. PATE AND ASSOCIATES  
 A/S&S ENGINEERING DESIGN SERVICES  
 C-102, MIDC BUILDING, NAVI MUMBAI - 400213  
 Email : [suresh@inspiresure.com](mailto:suresh@inspiresure.com) /  
[office@inspiresure.com](mailto:office@inspiresure.com)  
 www.inspiresure.com  
 Mob.No. : +91-9967423245

Client:  
 VISHWANIKETAN TRUST  
 B-82, SECTOR 12, OPPOSITE ANJANI HOSPITAL,  
 KHARGHAR, NAVI MUMBAI - 410213

Drawing No.:  
**FIRST FLOOR PLAN**

Title:  
 SUBMITTAL DRAWING

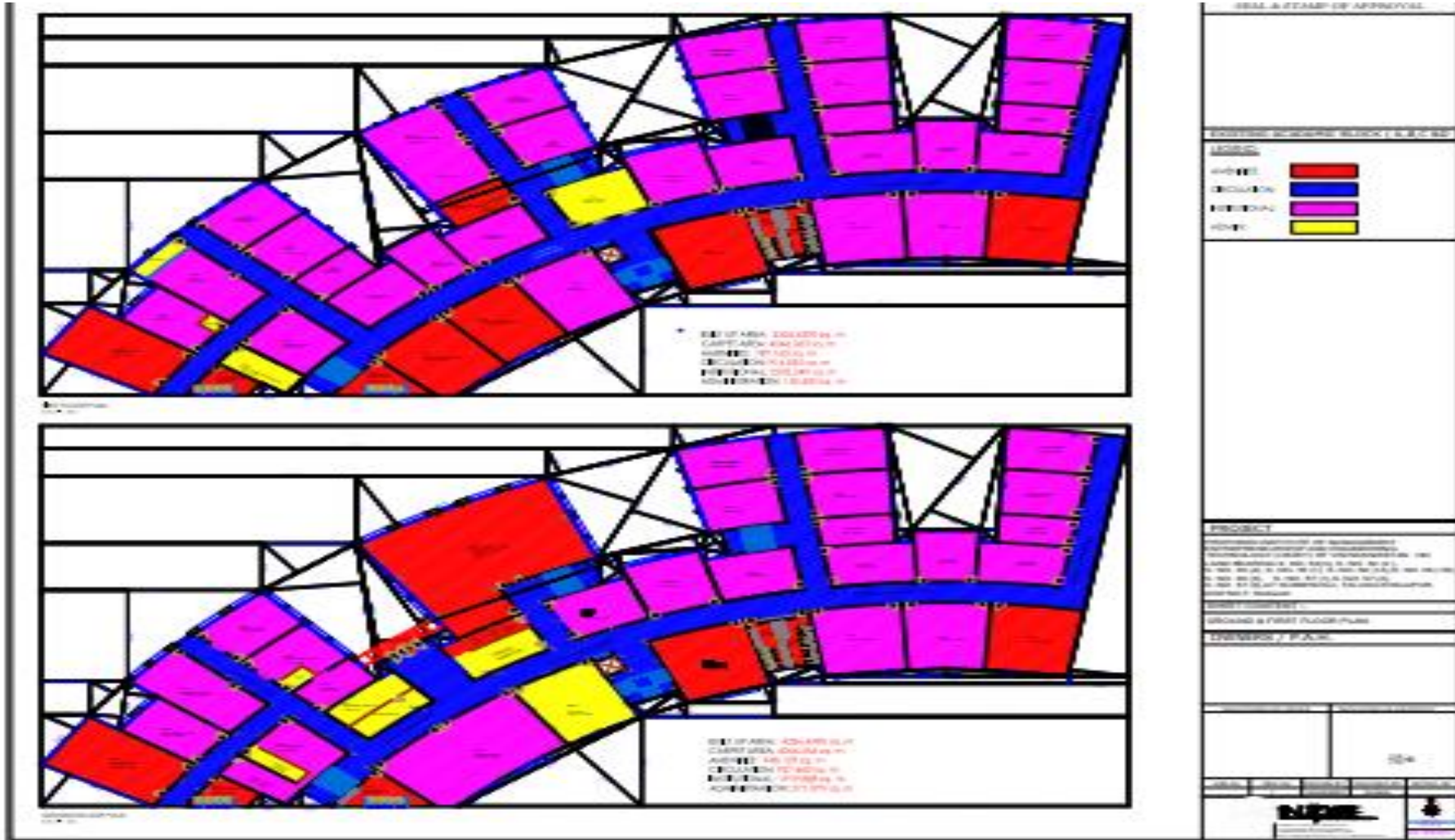
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 Date: 10/04/2021  
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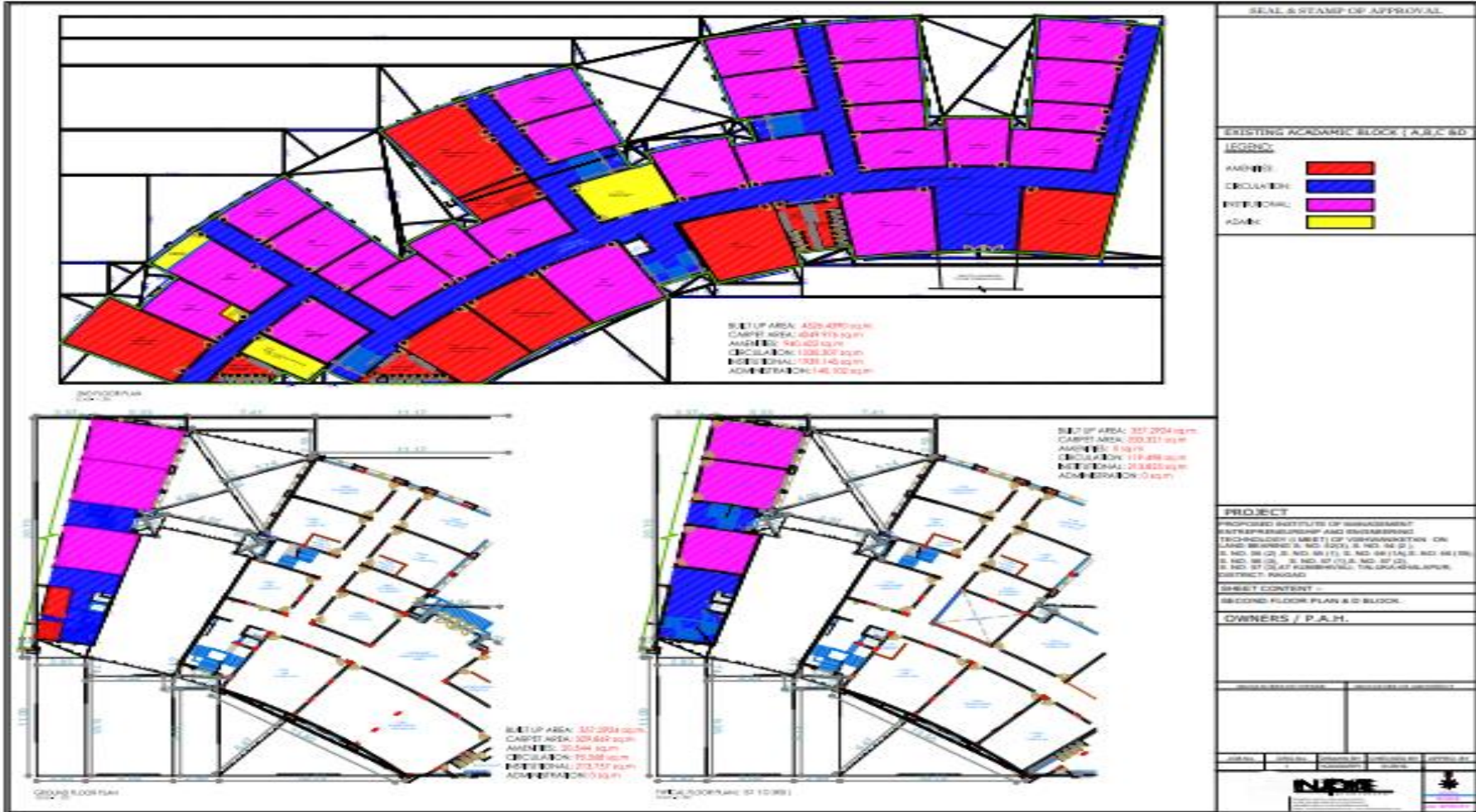




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 <p>VISHWANIKETAN</p>	<p><b>Energy Audit Report</b>  <b>Vishwaniketan's Institute of Management</b>  <b>Entrepreneurship and Engineering Technology</b>  <b>Khalapur, Year 2020-21</b></p>	
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### 1.3 Name of Departments:

#### **Institute of Engineering:**


Affiliated to University of Mumbai; Approved by AICTE New Delhi & Recognised by Govt. of Maharashtra DTE CODE: EN3467. Following are Degree Courses at Vishwaniketan:


- Computer Science & Engg. (AI & ML)
- Electronics & Telecommunications Engineering
- Civil, Engineering
- Computer Engineering
- Mechanical Engineering
- Electrical Engineering

#### **Institute Of Architecture, Arts And Design**


#### **Institute of Design:** Following are the Courses Offered

- Product Design
- Graphic Design & Illustration
- Interior Architecture & Design
- Fashion with Textile

 **Project Based Learning Centre of Excellence** : Project-based learning is a student-centered pedagogy that involves a dynamic classroom approach in which it is believed that students acquire a deeper knowledge through active exploration of real-world challenges and problems.

 **Business Modelling Centre of Excellence (BMCOE)** : VISHWANIKETAN'S efforts to move from conventional teaching methods to PBL(Project based learning), we realised that there is huge potential for the applicability of the PBL resultant projects in terms of Industry based solutions and in terms of independent business application. Under the European Commission's Project CENTRAL, which aims at capacity building in higher education, 3 of our teachers were sent to Aarhus University to be trained in Business Modelling

#### 1.4 Integrated (Energy Environment & Green) Policy



**VISHWANIKETAN**

Reg. No. F9819 - Raigad      Society Reg. No. MAH/207/2012/Raigad

Corporate Office : B - 52, Sector - 12, Kharghar, Navi-Mumbai - 410210

Campus : Survey No. 52, Kumbhivali, Near Khalapur Toll Naka, off. Mumbai-Pune Expressway, Tal - Khalapur

Dist. - Raigad - Pin- 410 202 • Telephone - 02192 - 274 206/07/08/10

<p><b>Mr. Madhu Bathija</b> President</p>	<p><b>Dr. S. S. Inamdar</b> Vice - President</p>	<p><b>Mr. Sunil Bangar</b> Secretary</p>
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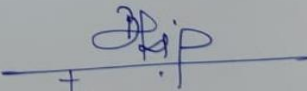
*VIMMET (office 196(A)/2018-19      Date - 21/08/2018*

**Integrated Energy, Environment & Green Policy**

Management of our institution are committed to go green for making our nation to Atma-Nirbhar (i.e. Self-Sustainable) in the area of energy and environment.

Our emphasis to:

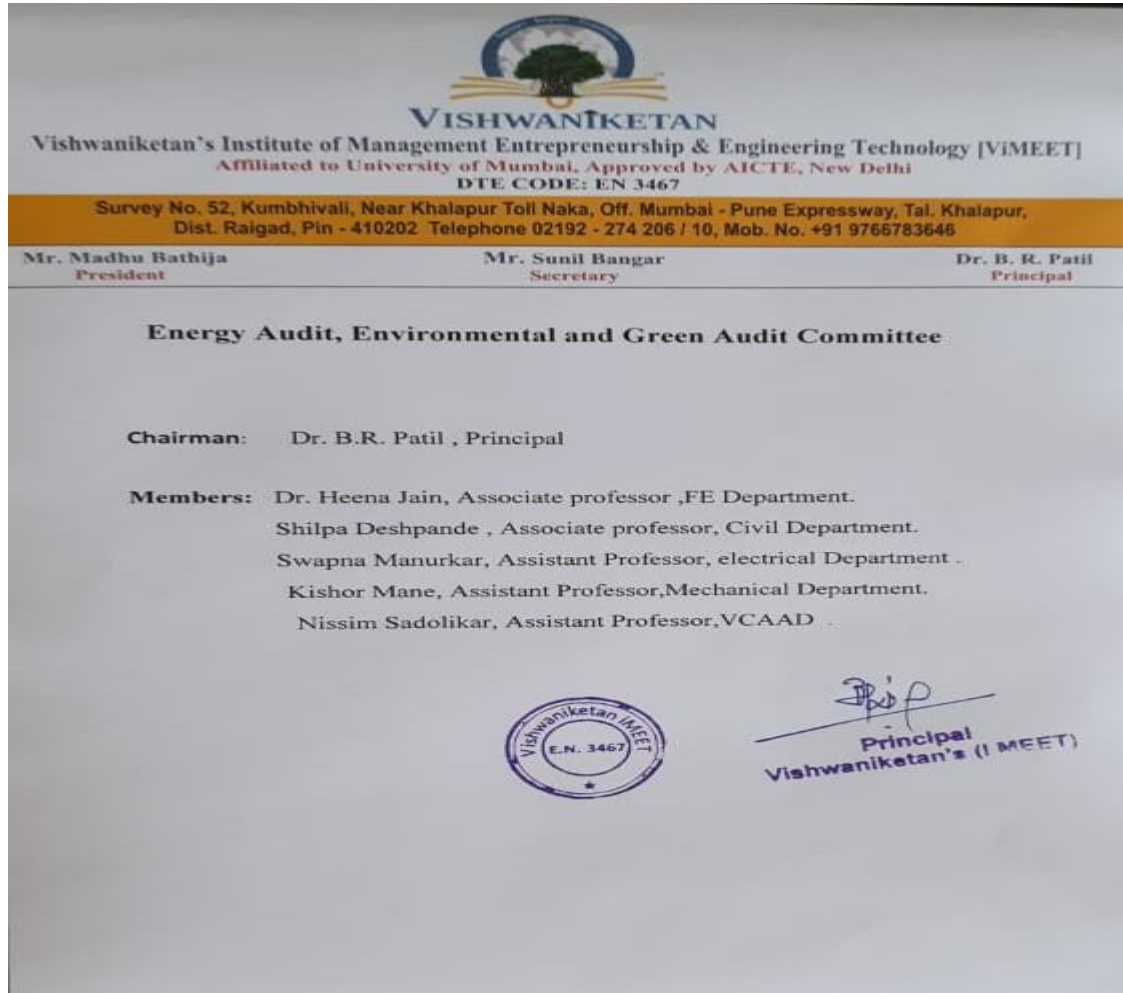
1. Ensure continual enhancements in our energy and water conservation methods and usage.
2. Procure and use energy efficient equipment's and products.
3. Continuously monitoring the energy consumption patterns through periodic reviews & using latest informative system.
4. Create awareness regarding necessity of energy conservation and making environment pollution free to all staff and students on a regular basis by arranging trainings, workshops, seminars, quiz competitions, etc.
5. Carry out regular energy, environment and green audits by certified auditors to identify key areas of improvements.



**Sunil Bangar**  
Secretary  
Secretary  
Vishwaniketan

URL - [www.vishwaniketan.edu.in](http://www.vishwaniketan.edu.in) Email- [secretary@vishwaniketan.edu.in](mailto:secretary@vishwaniketan.edu.in) <http://www.facebook.com/vishwaniketan.in>

### 1.5 Audit committee



### 1.6 Energy Audit Team

The study team constituted of the following senior technical executives from **Empirical Exergy Private Limited**,

- ✚ **Mr. Rakesh Pathak**, [Director ]
- ✚ **Dr. Suresh Soni** [Reviewer]
- ✚ **Mrs. Laxmi Raikwar Singadiya**,[Energy Engineer]
- ✚ **Mr. Sachin Kumawat** [ Project Engineer]
- ✚ **Mr. Ajay Nahra**, [Site Engineer]

### 1.7 About Energy Audit

Energy audit helps to understand more about the ways energy is used in any plant and helps in identifying areas where waste may occur and scope for improvement exists. *The overall energy efficiency from generation to final consumer becomes 50%. Hence one unit saved in the end user is equivalent to two units generated in the power plant. (1 Unit / 0.5 Efficiency = 2Units)*

Energy audit is the most efficient way to identify the strength and weakness of energy management practices and to find a way to solve problem. Energy audit is one kind of professional approach towards a responsible way in utilizing economic, financial, and social and natural resources. Energy audits can “add value” to the management approaches being taken by the institute and is a way of identifying, evaluating the system.

The Empirical Exergy Private Limited (EEPL), Indore M.P. carried out the “**Energy Audit**” at the site to find loopholes in the energy consumption pattern for **Vishwaniketan's Institute of Management Entrepreneurship and Engineering Technology Khalapur**, A technical report has been prepared as per the need and the requirement of the project.

### 1.8 Objectives of Energy Auditing

The energy audit provides the vital information base for overall energy conservation program covering essentially energy utilization analysis and evaluation of energy conservation measures. It aims at:

- Identifying the quality and cost of various energy inputs.
- Assessing present pattern of energy consumption in different cost centers of operations.
- Relating energy inputs and production output.
- Identifying potential areas thermal and electrical energy economy.
- Highlighting wastage's in major areas.
- Fixing of energy saving potential targets for individual cost centers.
- Implementation of measures for energy conservation & realization of savings.

### 1.9 Methodology:

Methodology adopted for achieving the desired objectives viz.: Assessment of the current operational status and energy savings include the following:

- ✚ Discussions with the concerned officials for identification of major areas of focus and other related systems.
- ✚ Team of engineers visited the site and had discussions with the concerned officials / supervisors to collect data / information on the operations and load distribution within the plant and same for the overall premises. The data was analyzed to arrive at a base line energy consumption pattern.
- ✚ Measurements and monitoring with the help of appropriate instruments including continuous and / or time-lapse recording, as appropriate and visual observations were made to identify the energy usage pattern and losses in the system.
- ✚ Trend analysis of costs and consumptions.
- ✚ Capacity and efficiency test of major utility equipment's, wherever applicable.
- ✚ Estimation of various losses
- ✚ Computation and **in-depth analysis** of the collected data, including utilization of computerized analysis and other techniques as appropriate were done to draw inferences and to evolve suitable energy conservation plan/s for improvements/reduction in specific energy consumption.

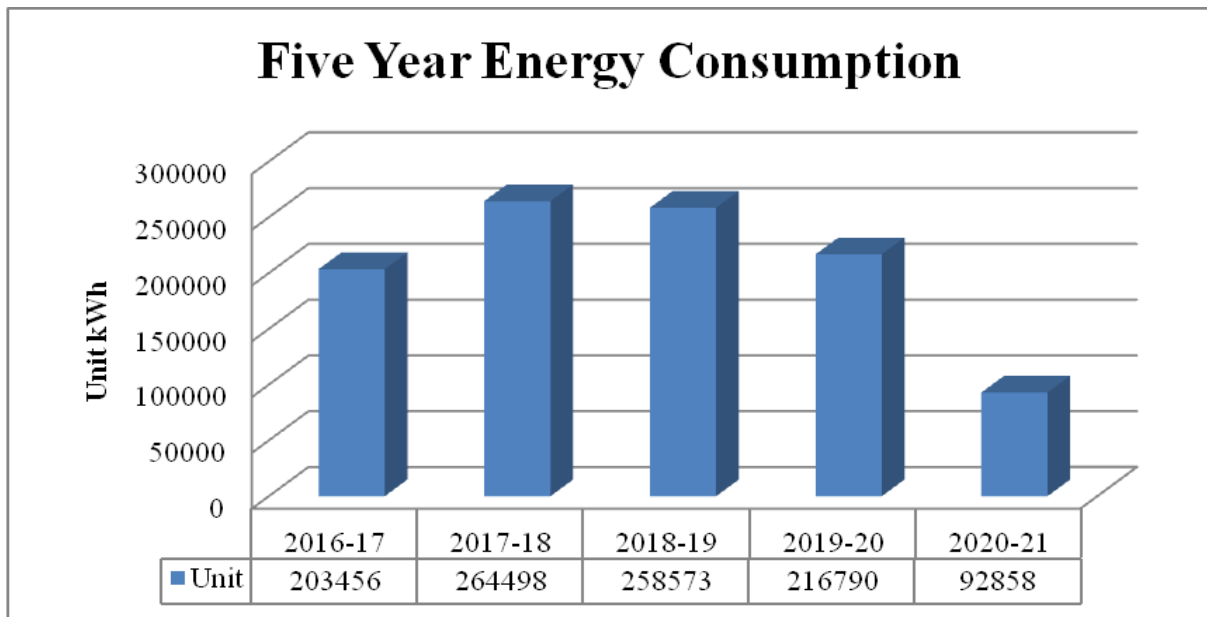


**1.10 Present Energy Scenario:**

Vishwaniketan's Institute of Management Entrepreneurship and Engineering Technology Khalapur use energy in the form of electricity purchased from Maharashtra State Electricity Distribution Co. Ltd. under Tariff Category 170- HT-IX B. The Institute has Contract Demand 250 KVA. Total annual energy consumption is 92,858 units in year 2020-21.

**Table: Five Year Energy Consumption Data**

Year	Unit	Amount
2016-17	203,456	27,21,530/-
2017-18	264,498	34,98,749/-
2018-19	258,573	37,89,510/-
2019-20	216,790	36,71,670/-
2020-21	92,858	19,67,595/-



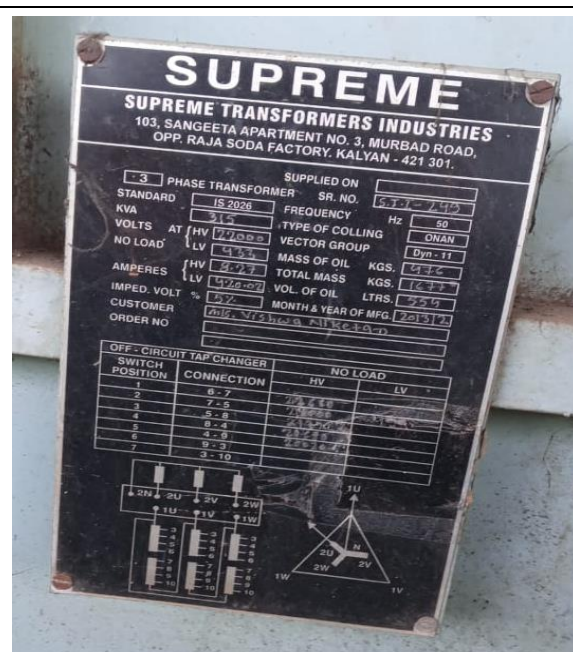
## CHAPTER- 2 POWER SUPPLY SYSTEM AND BILL ANALYSIS

### 2.1 Transformer

The power supply for the Institute is from with the help of 22 KV industrial feeder with contract demand 250 KVA. There is one Step down transformer for down the power from the grid.

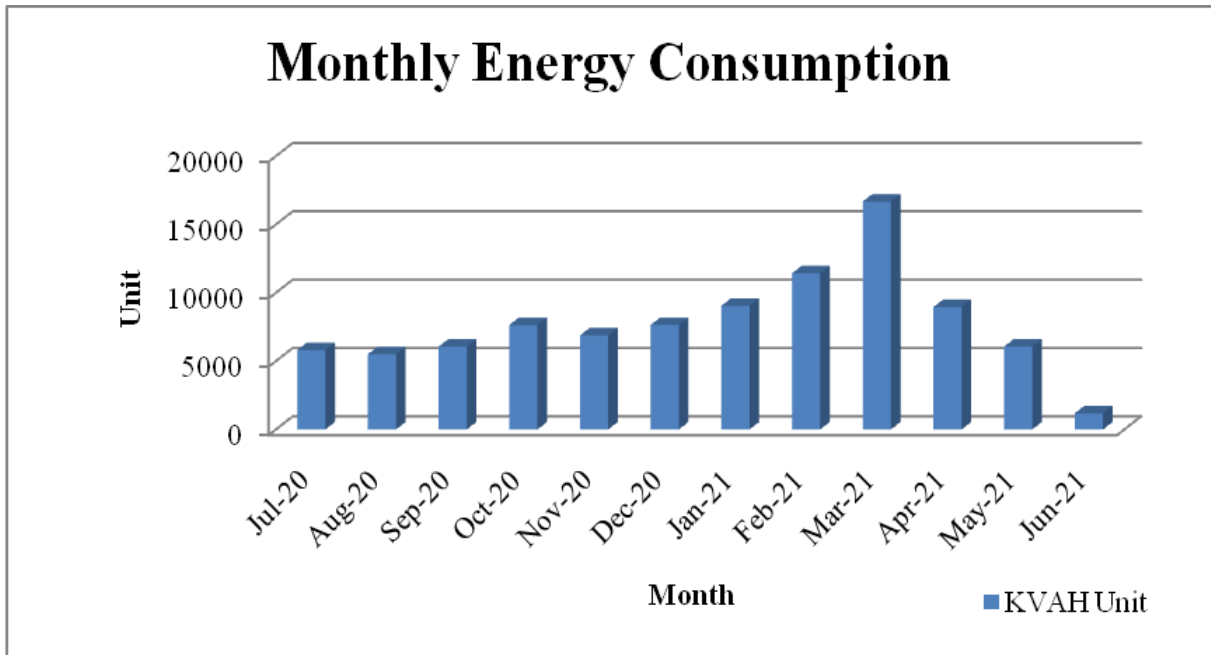
**Table: 2.1 Transformer Technical Details**

Sr. No.	Items	Technical Details Transformer
	<b>Location</b>	<b>Near Canteen</b>
1	Make	Supreme Transformer Industries
2	Year	2013
3	Rating (KVA)	315
4	Voltage (HV/ LV)	22000/433
5	Current Rating (HV/ LV)	8.27/420.02
6	Frequency (Hz)	50
7	Impedance at 75°C	5%
8	Vector group	Dyn-11
9	Type of cooling	ONAN
10	Total no of Tap	7
11	Ideal Tap Potion	1
12	Max.Losses at 50 %	NA
13	Max.Losses at 100 %	NA



**Table 2.2 Monthly Energy Consumption**

Sr. No	Month	Contract Demand	Billing Demand	KVAH Unit
1	Jul-20	250	138	5798
2	Aug-20	250	138	5508
3	Sep-20	250	138	6058
4	Oct-20	250	138	7638
5	Nov-20	250	138	6876
6	Dec-20	250	138	7646
7	Jan-21	250	138	9042
8	Feb-21	250	138	11422
9	Mar-21	250	138	16674
10	Apr-21	250	150	8954
11	May-21	250	150	6059
12	Jun-21	250	150	1183
		250		92858



**2.2 DG Sets:-**

There is 1 DG set in Institute campus . Detailed of the DG Sets are given table...:

Table 2.3 Technical Specifications for DG sets

Sr. No.	Parameter	Technical Specification DG-01
1	Make	Trident Powercraft Pvt. Ltd
2	Capacity	125 KVA
3	Rated Voltage	415 V
4	Full load current	173.9 A
5	Frequency	50 Hz
6	Power factor	0.80
7	RPM	1500
8	Phase	3



**Table 2.4 Monthly Diesel Consumption**

Sr. No	Month	Monthly Diesel Consumption		
		2018-19	2019-20	2020-21
1	July	460	540	0
2	August	600	240	180
3	September	360	280	120
4	October	210	420	240
5	November	120	0	0
6	December	540	180	0
7	January	0	90	0
8	February	180	90	0
9	March	360	0	0
10	April	320	510	240
11	May	397	0	120
12	June	600	360	120
		<b>4147</b>	<b>2710</b>	<b>1020</b>

**Observation:**

- ✚ DG set used only for emergency power supply whenever power failure from grid.
- ✚ Total Unit Generated 102077 from date of insulation year 2014.
- ✚ It is recommended to main Monthly unit generation and fuel consumption record of DG Set for Determine Specific Energy generation(kWh/lit.)

**2.3 On Grid Solar PV Roof Top System**

Institute has installed 100 kWp on grid Solar PV Roof Top System. Solar system is generated total unit 20,980 kWh in month of Feb-22



## 2.4 Connected Load Details:

Table 2.5: - Connected load details

ARCHITECTURE BUILDING					
Sr. No	Location	Type of load	Quantity	Watt	Total Power
1	Third Year Studio 027	LED	9	36	324
		Ceiling Fan	9	70	630
		Wall mounted Fan	5	30	150
2	Fourth Year Studio 028	LED	10	36	360
		Ceiling Fan	9	70	630
		Router	1	3	3
3	Fifth Year Studio 029	LED	8	36	288
		Ceiling Fan	10	70	700
4	Corridor 2nd floor	LEDs	3	36	108
		CCTV	1	3	3
5	Staff Lounge	LED	1	36	36
6	Toilet	LED	2	15	30
7	Lecture Room 023	Tube light	6	36	216
		Fan	4	70	280
8	Library 022	Fan	8	70	560
		Tube light	8	36	288
		CCTV	1	3	3
		PC's	1	70	70
9	Computer Lab 020	PC's	38	70	2660
		Tube light	6	36	216
		Fan	4	70	280
		Router	1	3	3
		CCTV	1	3	3
10	Lecture Room 018	Tube light	6	36	216
		Fan	4	70	280
		Projector	1	250	250
11	Corridor	Tube light	5	36	180
		CCTV	1	3	3
12	Girls Common Room	Tube light	2	36	72
		Fan	2	70	140
13	First Year Studio 013	Tube light	9	36	324
		Fan	6	70	420
14	Second Year Studio	Ceiling Fan	6	70	420
		wall mounted Fan	3	30	90
		Tube light	6	36	216
15	Staff Room	Fan	7	70	490
		Tube light	8	36	288
		Laptop	3	50	150
		PC's	1	70	70
		Electric Kettle	1	70	70
16	Corridor ground	Router	1	3	3
		Tube light	6	36	216



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<b>ARCHITECTURE BUILDING</b>					
<b>Sr. No</b>	<b>Location</b>	<b>Type of load</b>	<b>Quantity</b>	<b>Watt</b>	<b>Total Power</b>
17	Administration 003	Fan	2	70	140
		LED	7	15	105
		CCTV	1	3	3
		PC's	2	70	140
		Printer	2	50	100
18	Principal Cabin 004	Fan	1	70	70
		LED	1	15	15
		Laptop	1	50	50
		PC	1	70	70
19	Boys Toilet	Tube light	2	36	72
20	Professor Room009	Fan	1	70	70
		LED	2	15	30
					12604



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<b>BOYS HOSTEL</b>					
Sr. no	Location	Type of load	Quantity	Watt	Total Power
1	ROOM NO 1	TUBE LIGHT	1	40	40
		FAN(B)	1	70	70
		LED BULB	1	9	9
2	ROOM NO 2	TUBE LIGHT	1	40	40
		FAN(B)	1	70	70
3	ROOM NO 3	TUBE LIGHT	1	40	40
		FAN(B)	1	70	70
		GYSER	1	3000	3000
		LED BULB	1	5	5
4	ROOM NO 4	TUBE LIGHT	1	40	40
		FAN(B)	1	70	70
		GYSER	1	3000	3000
5	ROOM NO 5	TUBE LIGHT	1	40	40
		FAN(B)	1	70	70
		GYSER	1	3000	3000
		LED BULB	2	9	18
6	ROOM NO 6	AC	1	1840	1840
		TUBE LIGHT	1	40	40
		FAN(B)	1	70	70
		GYSER	1	3000	3000
		LED BULB	1	5	5
7	ROOM NO 7	TUBE LIGHT	1	40	40
		FAN(B)	1	70	70
		GYSER	1	3000	3000
		LED BULB	2	5	10
8	ROOM NO 8	TUBE LIGHT	4	40	160
		FAN(B)	3	70	
		GYSER	1	3000	3000
		LED BULB	2	5	10
		REFRIGERATOR	1	780	780
9	ROOM NO 9	WASHING MACHINE	1	1000	1000
		TUBE LIGHT	1	40	40
		FAN(B)	1	70	70
		GYSER	1	3000	3000
		LED BULB	1	5	5
10	ROOM NO 10	AC	1	1840	1840
		TUBE LIGHT	2	40	80
		FAN(B)	2	70	140





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11	ROOM NO 11	TUBE LIGHT	2	40	80
		FAN(B)	2	70	140
12	ROOM NO 12	TUBE LIGHT	2	40	80
		FAN(B)	2	70	140
13	ROOM NO 13	TUBE LIGHT	1	40	40
		FAN(B)	2	70	140
14	ROOM NO 14	TUBE LIGHT	2	40	80
		FAN(B)	2	70	140
15	ROOM NO 15	TUBE LIGHT	2	40	80
		FAN(B)	2	70	140
16	ROOM NO 16	TUBE LIGHT	2	40	80
		FAN(B)	2	70	140
17	ROOM NO 17	TUBE LIGHT	2	40	80
		FAN(B)	2	70	140
18	ROOM NO 18	TUBE LIGHT	1	40	40
		FAN(B)	2	70	140
19	ROOM NO 19	TUBE LIGHT	1	40	40
		FAN(B)	2	70	140
20	ROOM NO 20	TUBE LIGHT	1	40	40
		FAN(B)	2	70	140
21	ROOM NO 21	TUBE LIGHT	1	40	40
		FAN(B)	1	70	70
22	ROOM NO 22	TUBE LIGHT	1	40	40
		FAN(B)	1	70	70
		GYSER	1	3000	3000
		LED BULB	1	5	5
		AC	1	1840	1840
23	ROOM NO 23	TUBE LIGHT	1	40	40
		FAN(B)	1	70	70
		GYSER	1	3000	3000
		LED BULB	1	5	5
		AC	1	1840	1840
24	ROOM NO 24	TUBE LIGHT	1	40	40
		FAN(B)	1	70	70
		GYSER	1	3000	3000
		LED BULB	1	5	5
		AC	1	1840	1840
25	ROOM NO 25	TUBE LIGHT	1	40	40
		FAN(B)	1	70	70
		GYSER	1	3000	3000
		LED BULB	1	5	5
26	ROOM NO 26	TUBE LIGHT	1	40	40



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		FAN(B)	1	70	70
		GYSER	1	3000	3000
		LED BULB	1	5	5
		AC	1	1840	1840
27	ROOM NO 27	TUBE LIGHT	1	40	40
		FAN(B)	1	70	70
		GYSER	1	3000	3000
		LED BULB	1	5	5
		AC	1	1840	1840
28	ROOM NO 28	TUBE LIGHT	2	40	80
		FAN(B)	1	70	70
		GYSER	1	3000	3000
		LED BULB	1	5	5
29	ROOM NO 29	TUBE LIGHT	1	40	40
		FAN(B)	1	70	70
		GYSER	1	3000	3000
		LED BULB	1	5	5
30	ROOM NO 30	TUBE LIGHT	1	40	40
		FAN(B)	1	70	70
		GYSER	1	3000	3000
		LED BULB	1	5	5
31	ROOM NO 31	TUBE LIGHT	1	36	36
		FAN(B)	2	70	140
32	ROOM NO 32	TUBE LIGHT	2	36	72
		FAN(B)	2	70	140
33	ROOM NO 33	TUBE LIGHT	2	36	72
		FAN(B)	2	70	140
34	ROOM NO 34	TUBE LIGHT	2	36	72
		FAN(B)	2	70	140
35	ROOM NO 35	TUBE LIGHT	2	36	72
		FAN(B)	2	70	140
36	ROOM NO 36	TUBE LIGHT	2	36	72
		FAN(B)	2	70	140
37	ROOM NO 37	TUBE LIGHT	2	36	72
		FAN(B)	2	70	140
38	ROOM NO 38	TUBE LIGHT	2	36	72
		FAN(B)	2	70	140
39	ROOM NO 39	TUBE LIGHT	2	36	72
		FAN(B)	2	70	140
40	ROOM NO 40	TUBE LIGHT	2	36	72
		FAN(B)	2	70	140
41	ROOM NO 41	TUBE LIGHT	2	36	72



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		FAN(B)	2	70	140
42	ROOM NO 42	TUBE LIGHT	2	36	72
		FAN(B)	2	70	140
43	ROOM NO 43	TUBE LIGHT	2	36	72
		FAN(B)	2	70	140
44	ROOM NO 44	TUBE LIGHT	2	36	72
		FAN(B)	2	70	140
45	ROOM NO 45	TUBE LIGHT	2	36	72
		FAN(B)	2	70	140
46	ROOM NO 46	TUBE LIGHT	2	36	72
		FAN(B)	2	70	140
47	ROOM NO 47	TUBE LIGHT	2	36	72
		FAN(B)	2	70	140
48	ROOM NO 48	TUBE LIGHT	2	36	72
		FAN(B)	2	70	140
49	ROOM NO 49	TUBE LIGHT	2	36	72
		FAN(B)	2	70	140
50	ROOM NO 50	TUBE LIGHT	2	36	72
		FAN(B)	2	70	140
51	ROOM NO 51	TUBE LIGHT	2	36	72
		FAN(B)	2	70	140
52	ROOM NO 52	TUBE LIGHT	2	36	72
		FAN(B)	2	70	140
53	ROOM NO 53	TUBE LIGHT	2	36	72
		FAN(B)	2	70	140
54	ROOM NO 54	TUBE LIGHT	2	36	72
		FAN(B)	2	70	140
55	ROOM NO 55	TUBE LIGHT	2	36	72
		FAN(B)	2	70	140
56	ROOM NO 56	TUBE LIGHT	2	36	72
		FAN(B)	2	70	140
57	ROOM NO 57	TUBE LIGHT	2	36	72
		FAN(B)	2	70	140
58	ROOM NO 58	TUBE LIGHT	2	36	72
		FAN(B)	2	70	140
59	ROOM NO 59	TUBE LIGHT	2	36	72
		FAN(B)	2	70	140
60	ROOM NO 60	TUBE LIGHT	2	36	72
		FAN(B)	2	70	140
61	ROOM NO 61	TUBE LIGHT	2	36	72
		FAN(B)	2	70	140
62	ROOM NO 62	TUBE LIGHT	2	36	72



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		FAN(B)	2	70	140
63	ROOM NO 63	TUBE LIGHT	2	36	72
		FAN(B)	2	70	140
64	GROUND FLOOR BATHROOM	TUBE LIGHT	3	36	108
		GYSER	3	3000	9000
65	GOUND FLOOR PASSAGE	TUBE LIGHT	3	36	108
66	1ST FLOOR BATHROOM	LED	3	5	15
		TUBE LIGHT	2	36	72
		GYSER	3	3000	9000
67	1ST FLOOR PASSAGE	TUBE LIGHT	5	36	180
		ROUTER	1	3	3
68	2ND FLOOR BATHROOM	TUBE LIGHT	1	36	36
		LED	3	5	15
		GYSER	3	3000	9000
69	2ND FLOOR PASSAGE	TUBE LIGHT	4	36	144
					101848



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**GIRLS HOSTEL**

Sr. No	Location	Type of load	Quantity	Watt	Total Power
1	ROOM NO 1	TUBE LIGHT	1	40	40
		FAN	1	70	70
		WASHING MACHINE	1	1000	1000
2	ROOM NO 2	TUBE LIGHT	2	40	80
		FAN	2	70	140
		LED BULB	1	9	9
		GYSER	2	3000	6000
3	ROOM NO 3	TUBE LIGHT	2	40	80
		FAN	2	70	140
		LED BULB	2	9	18
		GYSER	1	3000	3000
4	ROOM NO 4	TUBE LIGHT	2	40	80
		FAN	2	70	140
		LED BULB	2	9	18
		GYSER	1	3000	3000
5	ROOM NO 5	TUBE LIGHT	2	40	80
		FAN	2	70	140
		LED BULB	2	9	18
		GYSER	1	3000	3000
6	ROOM NO 6	TUBE LIGHT	2	40	80
		FAN	2	70	140
		LED BULB	2	9	18
		GYSER	1	3000	3000
		TV	1	50	50
7	ROOM NO 7	TUBE LIGHT	2	40	80
		FAN	2	70	140
		LED BULB	2	9	18
		GYSER	1	3000	3000
8	ROOM NO 8	TUBE LIGHT	2	40	80
		FAN	2	70	140
		LED BULB	2	9	18
		GYSER	1	3000	3000
9	ROOM NO 9	TUBE LIGHT	2	40	80
		FAN	2	70	140
		LED BULB	2	9	18
		GYSER	1	3000	3000
10	ROOM NO 10	TUBE LIGHT	2	40	80



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		FAN	2	70	140
		LED BULB	2	9	18
		GYSER	1	3000	3000
11	ROOM NO 11	TUBE LIGHT	2	40	80
		FAN	2	70	140
		LED BULB	2	9	18
		GYSER	1	3000	3000
12	ROOM NO 12	TUBE LIGHT	2	40	80
		FAN	2	70	140
		LED BULB	2	9	18
		GYSER	1	3000	3000
13	ROOM NO 13	TUBE LIGHT	2	40	80
		FAN	2	70	140
		LED BULB	2	9	18
		GYSER	1	3000	3000
14	ROOM NO 14	TUBE LIGHT	2	40	80
		FAN	2	70	140
		LED BULB	2	9	18
		GYSER	1	3000	3000
15	ROOM NO 15	TUBE LIGHT	2	40	80
		FAN	2	70	140
		LED BULB	2	9	18
		GYSER	1	3000	3000
16	ROOM NO 16	TUBE LIGHT	2	40	80
		FAN	2	70	140
		LED BULB	2	9	18
		GYSER	1	3000	3000
17	ROOM NO 17	TUBE LIGHT	2	40	80
		FAN	2	70	140
		LED BULB	2	9	18
		GYSER	1	3000	3000
18	ROOM NO 18	TUBE LIGHT	2	40	80
		FAN	2	70	140
		LED BULB	2	9	18
		GYSER	1	3000	3000
19	ROOM NO 19	TUBE LIGHT	1	40	40
		FAN	1	70	70
20	ROOM NO 20	TUBE LIGHT	2	40	80
		FAN	2	70	140
		LED BULB	2	9	18
		GYSER	1	3000	3000
		AC	1	1840	1840



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21	ROOM NO 21	TUBE LIGHT	2	40	80
		FAN	2	70	140
		LED BULB	2	9	18
		GYSER	1	3000	3000
		AC	1	1840	1840
22	ROOM NO 22	TUBE LIGHT	2	40	80
		FAN	2	70	140
		LED BULB	2	9	18
		GYSER	1	3000	3000
		AC	1	1840	1840
23	ROOM NO 23	TUBE LIGHT	2	40	80
		FAN	2	70	140
		LED BULB	2	9	18
		GYSER	1	3000	3000
		AC	1	1840	1840
24	ROOM NO 24	TUBE LIGHT	2	40	80
		FAN	2	70	140
		LED BULB	1	9	9
25	ROOM NO 25	TUBE LIGHT	2	40	80
		FAN	2	70	140
		LED BULB	2	9	18
		GYSER	1	3000	3000
26	ROOM NO 26	TUBE LIGHT	2	40	80
		FAN	2	70	140
		LED BULB	2	9	18
		GYSER	1	3000	3000
27	ROOM NO 27	TUBE LIGHT	2	40	80
		FAN	2	70	140
		LED BULB	2	9	18
		GYSER	1	3000	3000
28	ROOM NO 28	TUBE LIGHT	2	40	80
		FAN	2	70	140
		LED BULB	2	9	18
		GYSER	1	3000	3000
29	ROOM NO 29	TUBE LIGHT	2	40	80
		FAN	2	70	140
		LED BULB	2	9	18
		GYSER	1	3000	3000
30	ROOM NO 30	TUBE LIGHT	2	40	80
		FAN	2	70	140
		LED BULB	2	9	18
		GYSER	1	3000	3000



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31	ROOM NO 31	TUBE LIGHT	2	40	80
		FAN	2	70	140
		LED BULB	2	9	18
		GYSER	1	3000	3000
32	ROOM NO 32	TUBE LIGHT	2	40	80
		FAN	2	70	140
		LED BULB	2	9	18
		GYSER	1	3000	3000
33	ROOM NO 33	TUBE LIGHT	2	40	80
		FAN	2	70	140
		LED BULB	2	9	18
		GYSER	1	3000	3000
34	ROOM NO 34	TUBE LIGHT	2	40	80
		FAN	2	70	140
		LED BULB	2	9	18
		GYSER	1	3000	3000
35	ROOM NO 35	TUBE LIGHT	2	40	80
		FAN	2	70	140
		LED BULB	2	9	18
		GYSER	1	3000	3000
36	ROOM NO 36	TUBE LIGHT	2	40	80
		FAN	2	70	140
		LED BULB	2	9	18
		GYSER	1	3000	3000
37	1ST FLOOR CORRIDOR	TUBE LIGHT	5	40	200
38	2ND FLOOR CORRIDOR	TUBE LIGHT	5	40	200
					11910
					4





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**GIRLS HOSTEL**

Sr. No	Location	Type of load	Quantity	Watt	Total Power
	A-108	TUBE LIGHT	12	40	480
		FAN	7	70	490
	A-107	TUBE LIGHT	16	40	640
		FAN	8	70	560
	A-111a	TUBE LIGHT	8	40	320
		FAN	4	70	280
	A-109a	TUBE LIGHT	9	40	360
		FAN	6	70	420
	A-110	TUBE LIGHT	6	40	240
		FAN	5	70	350
	A-112	TUBE LIGHT	4	40	160
		FAN	4	70	280
	A-113	TUBE LIGHT	4	40	160
		FAN	2	70	140
	A108 (FACULTY ROOM)	TUBE LIGHT	3	40	120
		FAN	3	70	210
	107a COMPUTER CENTRE	TUBE LIGHT	6	40	240
		FAN	4	70	280
	B-109 LANGUAGE LAB	TUBE LIGHT	4	40	160
		FAN	5	70	350
					6240

### 2.5 Lux Measurement in Institute (Day Time)

Sr. no	Location	Lux.
1	Visual comm.	152,1406*
2	Design rom	371,379
3	Interior arch	67,525*
4	Product design	75,272,313*
5	Digital plastic(workshop)	194,920*
6	Wood metal(workshop)	116,309,39
7	Foundation-1	220,420,675*
8	Foundation-2	204,707*
9	Faculty room-1	9
10	Do-it-yourself(workshop)	125
11	Staff room	337
12	Conference room	309
13	Executive head	968
14	Seminar hall	104,309,950*
15	Admin room	279
16	Faculty room-2	2100*,235
17	D-209 faculty room	278,533*
18	D208 class	257,504*
19	D206,hod cabin	49,49
20	D202	217,535*
21	Phy.lab 207	16,432*
22	D201 lang.lab	26,170*,235*
23	Library- faculty	40,76,40
24	Library- student	198,2801*,513,3760*
25	210 class	191,602*
26	208 class	461,568
27	c-207,Micro-lab	731*,56
28	C211,applied elec.	109
29	C212,hod elec	71,34,82*
30	C204, robotics lab	267,1552*
31	Business club	167,177,22
32	UG fellowship	520
33	Vikasshinde- room	865*
34	Start-ups cabin	620,820
35	Mess	182,1190*,291, 119
36	Canteen	116,156,956*
37	A110 - class	490,532,
38	A109 - class	275,866*
39	A108 - class	91,457*
40	Passage – 1 <sup>st</sup> floor	192,51,90
41	B111	58
42	B106- class	367,540
43	B105- comp. lab	102,165,517*



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44	C107- class	142,253
45	HOD mechengg	108,272,2700*
46	C108	37,101*
47	C113	99,215*
48	C112	65,325*
49	C110	316,374
50	C109 class	26,636*
51	C101 EE lab	42,385,1893*
52	D105	207,183
53	D106 faculty	61,14
54	D109	530,336
55	D102	2100*,143,92
56	Passage ground floor	89,32
57	Mech- workshop	69,87,68,515*
58	reception	310
59	Director room	311
60	Principle room	209
61	Registrar office	2750*,76,84
62	Geo.tech lab	51,52
63	HOD civil	91,39,113
64	SOM lab	34,56
65	C012	184,158
66	Tre. Engg lab	415*,188
67	Ct lab	724*,58
68	B003	72,65,264*
69	Com.lab B004	88,223*,526*
70	Com.lab B007	17,116,486*
71	B005	142,342
72	Faculty B006	300*
73	Com.lab B002A	121,262,323
74	Xerox center	84
75	Director A002	30,251
76	Vishwaniketan office A004	78,138,123
77	Exam control room A012	164
78	Chem.lab	297,167,100
79	Applied mech	77
80	Seminar hall	28,85
81	Vice principle	711*
82	Account dep. C016	93,152

Sr No	Location	Lux.
1	Staff room	449*,105,20
2	SY Studio	121,176,483*
3	FY Studio	148,704*
4	018-lec room	48,176
5	library	175,120
6	Comp.lab	62,20,158
7	TE Studio	135,268
8	Fourth year studio	99,254,701*
9	Fifth year studio	144,144
10	023	177,642*

**Lux Measurement Vishwaniketan (Night Time)**

Sr. No	Location	Lux. Meter
1	MESS	57,62,160,105, 129
2	CAMPUS street light	22,20,19
3	Canteen	26,32,29
4	Wood metal(workshop)	338,85,397
5	Digital platic(workshop)	91
6	Foundation-1	44,286,264
7	Seminar hall	286,341
8	Visual commu	106,191
9	Design	63,248
10	Interior arch	273,70
11	Product design	184,199,149
12	Library	75,125
13	Passage 2 <sup>nd</sup> floor	125,115,111
14	Passage 1 <sup>st</sup> floor	2,83,47,52,103,77
15	Toilet 1 <sup>st</sup> floor	76
16	Passage Ground floor	74,75,51,31,27,97

**HOSTEL (Night TIME)**

Sr. No	Location	Lux.
1	ROOM-44	196,67
2	GYM	56,9
3	Toilet 2 <sup>nd</sup> floor	99,5
4	Passage 2 <sup>nd</sup> floor	42,217,84
5	Room- 48	59
6	Room -46	67,104,40
7	Passage 1 <sup>st</sup> floor	212,226,178
8	Room 33	104,49
9	Toilet 1 <sup>st</sup> floor	193,248

10	Room 38	109,33
11	Toilet –ground floor	160,227
12	Room 19	114,20
13	Room 2	77,29
14	Passage- ground floor	82,199,65

**2.6 Electrical Equipment’s Photographs: -**

