Shri. Gopinath Mahadeo Vedak Pratishthan's
G. M. Vedak Institute of Technology, Tala
College of Engineering (3447)
Approved by AICTE & DTE Recognized by the Govt. of Maharashtra & Affiliated to University of Mumbai
Web site: -www. gmvit.com Mob:9022802204 E-mail:- principal@gmvit.com

Criteria 7

NAAC 2022/ DVV/Criteria-7/7.1/7.1.6 Date: 23/11/2022

Criteria	Criteria 7 - Institutional Values and Best Practices
Key Indicator	**Quality audits on environment and energy are regularly undertaken by the Institution and any awards received for such green campus initiatives:** **1. Green audit** **2. Energy audit** **3. Environment audit** **4. Clean and green campus recognitions / awards** **5. Beyond the campus environmental promotion activities**
Finding In DVV	Provide the supporting document for the claims made.
Response/ Clarification	1. Provided Green Energy Environment Audit Report . 2. Provided Beyond the campus environmental promotion activities report.
Description	**Response Relevant DVV attached below in Appendix-I**

Appendix -I

Sr. No	Content	Page No.
1	Green Energy Environment Audit Report.	1 to 51
2	Cleaning Drive at Anandwadi.	52 to 53
3	Social Campaigning on Health and Cleanness at Anandwadi.	54 to 55

G.M.Vedak Institute of Technology Tala Raigad

23-11

Dr.D.N.Jaiswal
Principal

Lokmanya Tilak Jankalyan Shikshan Sansthaa's

LOKMANYA TILAK COLLEGE OF ENGINEERING

Approved by AICTE vide letter No. F-740-89-295 (E)/RC/94 Dt. 26-07-1994
Affiliated to University of Mumbai & Recognised by Govt. of Maharashtra

Shri. Satish Chaturvedi
Chairman

Dr. Vivek Sunnapwar
Principal

Ref. No.:- LTCE/GEN/2022/2 **Date- 30/01/2022**

ENERGY, GREEN & ENVIRONMENT AUDIT COMPLETION CERTIFICATE

This is to certify that Energy, Environment and Green Audit has been carried out in the campus and buildings of G. M. Vedak Institute of Technology, Tala, Raigad, Maharashtra, as per guidelines laid down in The Energy Conservation Act, 2001, in the month of January2022.

Name of the Installation	**G. M. Vedak Institute of Technology, Tala, Raigad, Maharashtra -402111**
Details of Facilities Audited	**Laboratories, Classrooms, Library, Seminar halls, Campus**
Date of Audit	**30/01/2022**
Name of Certified Energy Auditor	**Dr. S D Dalvi**
BEE Certification Number	**CEA- 12141**
Validity of the Certificate	**29/01/2023**

Dr. S D Dalvi
Certified Energy Auditor
(BEE, Govt of India)
Registration number: CEA- 12141

LOKMANYA TILAK COLLEGE OF ENGINEERING NAVI MUMBAI

Dr. Vivek Sunnapwar
Principal

PRINCIPAL
Lokmanya Tilak College of Engineering
Sector -4, Vikas Nagar, Koparkhairane.
Navi Mumbai - 400 709.

Report

On

ENERGY AUDIT, GREEN AUDIT & ENVIRONMENT AUDIT

for

GMVIT, Tala, Raigad

Prepared

By

1. Mr Kazi Zeeshan Abideen
2. Mr Logde Saad Mohamadsab
3. Mr Parte Vaibhav Vitthal
4. Mr Rahatwilkar Arman Ayyub

May 2022

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Chapter-I

Introduction

1.1 Background of the study :

The fundamental purpose of the energy audit is not only to identify the potential saving areas but also to establish energy monitoring and control system to reap the gains on sustainable basis. It is with this purpose that GMVIT, Tala, Raigad, Maharashtra, assigned Dr. S D Dalvi, Energy Auditor to carry out Energy Audit, forming the team of students of final year Mechanical Engineering.

This energy audit report presents the analysis of the data collected, observations made at the facility and is governed by the objectives, scope of work, methodology etc. discussed in the ensuing paragraphs.

Objective:

The basic objectives of the Energy Audit Study are to

- Identify key result areas for energy saving along with their broad Cost Benefit Analysis.
- Suggest energy monitoring and control mechanism to realize the savings on the sustainable basis.

Methodology:

Prior to start of the Audit session, submitted a list of data required along with the execution plan.

Then deputed a team of BE Mechanical engineering students for this task. The visit was undertaken in the Second week of February 2022. The field training was given to the students about data collection. The students were

also trained in December 2021, about operation and handling of the instruments used in the energy auditing.

The prime objectives of these visits were:

- To hold discussions with key personnel, to understand Energy consumption pattern, to get acquainted with the efforts already put in for energy conservation
- To collect historic data regarding energy consumption and maintenance practices.
- To undertake requisite field trials and to make observation.

Team:

The team members of the audit study.

1. Mr S D Dalvi, Certified Energy Auditor (EA-12141)
2. Mr Kazi Zeeshan Abideen
3. Mr Logde Saad Mohamadsab
4. Mr Parte Vaibhav Vitthal
5. Mr Rahatwilkar Arman Ayyub

Instruments

The following instruments were utilized for measurement during the energy audit study.

1. Power meter
2. Hygro-temperature meter
3. Anemometers
4. AC power meter
5. Lux meter

6. Air Quality meter

Acknowledgment:

We wish to record our gratitude to the management of GMVIT for awarding this assignment. We extend our thanks to the Principal, Head of Mechanical Engineering, for initiating the work. We are also thankful to the maintenance team for extending all possible help and co-operation from their side.

Chapter-II

Executive Summary

Energy Audit was undertaken at G M Vedak Institute of Technology, Tala, Raigad, during the month of AY 2019-2020.

The organization is very keen to optimize energy cost wherever possible, even though its contribution to overall operating cost is not very significant.

Major Potential:

The energy conservation potential has been identified in the following areas

Energy Saving Potential

Sr No	Description	Savings Potential	Investment	Payback Period
		Rs/month	Rs	Months
1	Replacing Magnetic Ballast with Electronic Ballasts for Tube lights and PL Lamps.	266	5200	19
2	Improving & maintaining performance of air conditioners at optimal levels	3165	1500	Immediate
3	Replacing Tube lights (TL) by LED lamps	720/TL	1600/LED	27
4	Replacing the old fans by energy efficient fans	11704	20,86,000	15 years

Chapter-III

Consumption Pattern

3.1 Brief Description & Consumption data:

Present Scenario:

- The average monthly consumption is around 3183 kWh from April 2021 to March 2022.
- The cost of power is Rs 10.79/- per kWh in April 2022.

As can be seen the major consumption is of

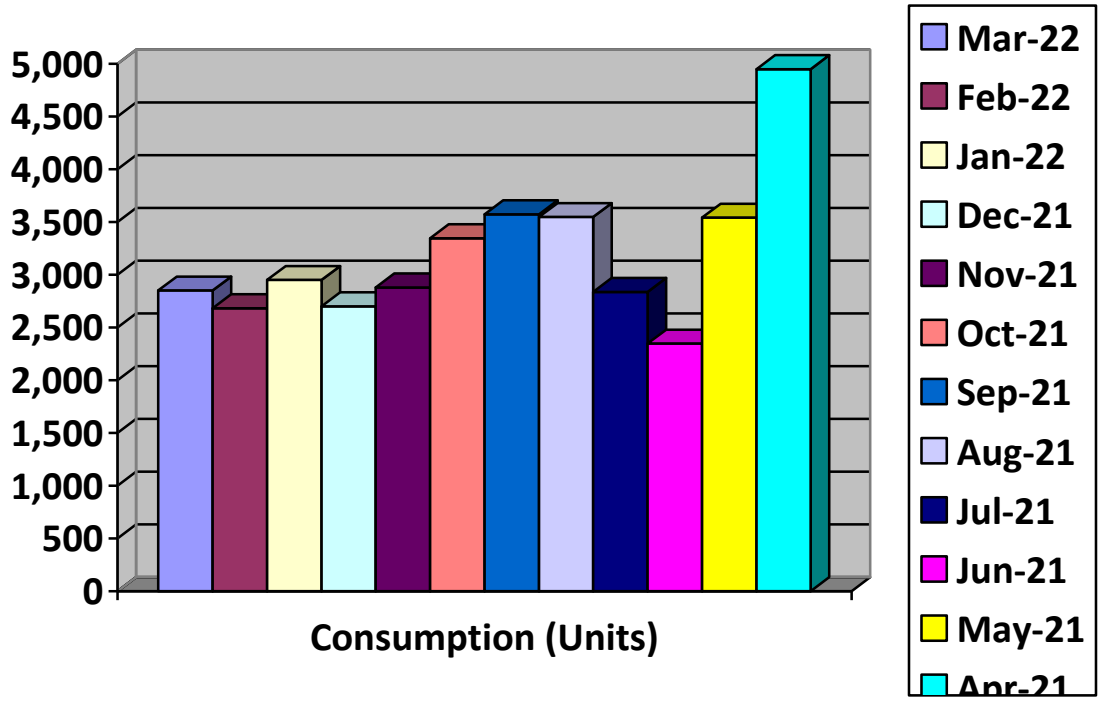
- Ceiling fans
- Computers
- Illumination.

3.2 Electricity Bills:

The electricity is supplied through LT connection; the electricity consumption for year 2021-22 is tabulated and shown in the graph.

Month	Consumption (Units)	Bill Demand (KVA)	Bill Amount
Mar 2022	2,850	22	52,801.06
Feb 2022	2,682	22	50,498.15
Jan 2022	2,950	22	54,376.36
Dec 2021	2,700	22	49,769.03
Nov 2021	2,880	22	52,292.89
Oct 2021	3,346	22	59,131.52
Sep 2021	3,573	22	62,509.14
Aug 2021	3,547	22	62,057.92
Jul 2021	2,836	22	52,444.13
Jun 2021	2,347	22	45,169.59
May 2021	3,541	22	62,477.49
Apr 2021	4,949	22	81,722.90

The consumption details are shown by graph.



Power factor for Consumer No 038090003329 is 0.88 and separate
savings are projected in this area.

Power Factor:

The power factor below 0.90 attracts penalty, typically at the rate of 1% for every 1% point reduction in the power factor. The power factor above 0.95 entails substantial incentive and also reduces maximum demand. The incentive is paid on the entire current bill amount; excluding taxes and duties (including charges for energy, maximum demand, fuel adjustment charges (FAC) and reliability).

The incentive structure for power factor is as under.

Sr No	Power factor	Power Factor	Incentive
1	0.96	0.955 to	1%
2	0.97	0.965 to	2%
3	0.98	0.975 to	3%
4	0.99	0.985 to	5%
5	1.00	0.995 to	7%

The improvement in power factor also reduces maximum demand and proportionally saves on demand charges. The power factor has been maintained at unity.

Chapter-IV

Computers

4.1 Brief Description:

In BSc building, there were 34 computers working out of 39 and in the Engineering building, there were 70 computers working out of 117. There were 8 printers each in the buiding B1 and B2.

General Suggestions:

1. An efficient power management system may be incorporated to

a. Switch off the display if not in use.

b. Put the computer in Sleep mode / switching off the machines, if not used for prolonged period.

2. Optimize brightness of the screen.

3. Discourage use of screen savers, which has similar power consumption

Chapter-V

Air Conditioning System

5.1 Brief Description:

Air conditioning system is basically provided to maintain comfortable ambience inside the premises by maintaining the temperature (and relative humidity, at times) at appropriate levels. The performance of human being is optimal at the temperature of 24 ± 2 ^{o}C and at relative humidity (RH) of 60 ± 5%.

The warmer and humid air from the premises is drawn and fed to the Air Conditioning System by a circulating fan. This air is chilled in an evaporator by vaporizing the refrigerant and is distributed throughout the conditioned area. The refrigerant is pressurized by a compressor and subsequently s cooled and condensed by an air cooled condenser. The compressor and condenser are placed in an outdoor unit, located on the external side of the premise. While the circulating fan and evaporator is placed in an indoor unit located inside the premises.

5.2 Performance Evaluation:

The Air Conditioning effect (TR) and specific power consumption can be computed as under

AC Effect (TR) = Air flow rate x Specific gravity of air x (Enthalpy of supply air - Enthalpy of return air) / 3000

Specific Power (kWh/TR) = Power Consumption / AC Effect

The performance of the various machines was evaluated, the details of which are as under.

The performance as well as chilling (or Air Conditioning) effect delivered by the air conditioner (represented as TR - Ton of Refrigeration) is computed by measuring

- Air Velocity along with the cross-sectional area of flow to determine flow rate and subsequently mass flow rate.
- Temperature and relative humidity of the air at the inlet of the evaporator coil to determine enthalpy of the air.
- Temperature and relative humidity of the air at the outlet of the evaporator coil to determine enthalpy of the air.
- Power drawn by the air conditioning unit

The chilling effect can be computed as under,

1. Flow Rate of Air (kg/hr)

= Average Air velocity (M/s) x Cross sectional area of the air flow (Sq M) X Specific gravity of air

2. Chilling or Air Conditioning Effect (TR)

= Air flow rate (kg/hr) x Enthalpy difference between the air at inlet and outlet of the evaporator coil (kJ/kg) / (4.18 x 3024)

3. Chilling or Air Conditioning Effect (kW)

= Air flow rate (kg/hr) x Enthalpy difference between the air at inlet and outlet of the evaporator coil (kJ/kg) / 3600

= 3.5112 x Chilling Effect (TR)

4. Specific Power Consumption (kWh/TR) =

Power consumption (kW) / Air Chilling Effect (TR)

Energy Efficiency Ratio - EER (W of cooling / W of input power)

= Power consumption (kW) / Air Chilling Effect (kW)

= 3.5112 / Specific Power consumption (kW/TR)

The data collected and analyzed is tabulated below.

Description	Unit	CR 1	CR 2	BSc Principal Office	Registrar
Design Data					
Rating - AC (Capacity)	TR	2	2	2	2
Star Rating		NA	NA	NA	NA
Energy Efficiency Ratio		NA	NA	NA	NA
Power Consumption	kW	NA	NA	NA	NA
Electrical Rating	kW	NA	NA	NA	NA
Operating parameters					
Operating period	Hr/D	7	7	7	7
	D/M	22	22	22	22
Velocity	M/s	0.78	0.78	0.64	0.76
Area	M2	0.144	0.144	0.1512	0.1539
Air flow	M3/Sec	0.112	0.11232	0.096768	0.117
	M3/hr	404.4	404.352	348.3648	421.07
Supply air - Temperature	oC	12.43	10.06	13.63	16.2
Supply air - RH	%	56.43	57.93	42.23	51.2
Return air - Temperature	oC	26.53	25.26	26.76	28.16
Return air - RH	%	12.43	10.06	13.63	16.2
Power Consumption	kW	1.796	1.609	1.321	1.765
Supply Enthalpy	kj/kg	25.21	21.23	23.98	31.07
Return Enthalpy	kj/kg	50.93	46.73	48.13	50.13
Operating Status					
Cooling Effect	TR	1.00	0.99	0.81	0.77
	% Rated	50%	50%	40%	39%
Specific Power	kWh/TR	1.80	1.62	1.64	2.29
Energy Efficiency Ratio		1.95	2.16	2.15	1.53
Desired parameters					
Cooling Effect (actual)	TR	1.00	0.99	0.81	0.77
Specific Power	kWh/TR	1.2	1.2	1.2	1.2
Energy Efficiency Ratio		2.93	2.93	2.93	2.93
Input Power	kW	1.20	1.19	0.97	0.92
Variation	%	33%	25%	9%	32%

Opportunity for Conservation of energy:

Performance improvement:

The specific power consumption of many of the air conditioning units is higher than the general norm of 1.2 KWH/TR or EER of around 3.0.
The saving potential works out to about 20% in the overall consumption of the air conditioners as can be seen from the table above.
The performance of air condition can deteriorate due to

- Lower suction pressure and consequently temperature due to constrains on the evaporator. Generally, 1 ^{o}C drop in condensing temperature increases the specific power consumption by 4 to 5%. The constraints on the evaporator include

o Clogging of the filters
o Choking of fins o Damages to the fins
o Deposition of dust on the external surface of the coil
o Scaling on the internal or external surface of the coil
o Depositions inside the coil o Inadequate surface areas due to improper design

- Higher discharge pressure and consequently temperature due to constrains on the condenser. Generally, 1 ^{o}C rise in condensing temperature increases the specific power consumption by 3 to 4%. The constraints on the condenser include

o Clogging of the fins o Damages to the fins
o Deposition of dust on the external surface of the coil
o Scaling on the internal or external surface of the coil
o Depositions inside the coil o Inadequate surface areas due to improper design

- Deteriorations in the fan (for the indoor as well outdoor unit) performance

o Damages to the fan blade o Deposition of dust on the fan surface o Damages to bearings, shaft, etc.

o Inadequate capacity due to improper design

- Improper location of the outdoor unit

o Direct exposure to sunlight o Inaccessible to maintenance / servicing o Restriction on cooling air circulation

- Improper quantity of refrigerant.
- Mechanical constrains on the refrigeration compressor

O Damages to bearings, shaft, etc.

O Increases in internal clearances

o Drop in volumetric efficiency

The saving potential can be worked out based on specific power consumption of 1.2 kWh/TR (Energy Efficiency Ratio - EER of 2.93); as detailed above.

The expected saving is about 340.33 kWh per month, considering an operating period of 7 hours a day for 22 days per month.

The savings work out to Rs 3,165/- per month.

There are no capital investment and the payback period shall be attractive.

Chapter-VI

Illumination

6.1 Brief Description:

The detail list of light fitting is as under. Most fittings are with electronic ballast and at very few locations magnetic ballast fittings are used.

Location	Ballast Type	Fitting		Area	RI	Intensity	Power Intensity	Illumination level	Desired Parameters		Installed Load Efficacy Ratio	Desired Parameters (ILER = 75%)		Energy Loss (-ve indicates gain due to solar)		Saving Potential Diversity Factor 75% & Power @ Rs. 9.30/kWh
	E-Electric	fitted	working	M2				Average	Actual	Desired		Power Intensity	Power			
						Watts	W/M^2	Lux	Lux/W/M2			W/M^2	W	W	%	kWh/M
BSc Ground Floor (Engineering labs)																
Mc/shop	E	22	16	230	1.80	576	2.5	63.08	25.2	46	55%	1.83	421.3	154.7	27%	11.6
Thermal Lab	E	10	6	137	1.58	216	1.6	151.2	96.0	46	209%	4.38	600.9	-384.9	-178%	-28.9
HT Lab	E	4	4	68	1.21	144	2.1	146.8	69.0	40	173%	4.89	331.2	-187.2	-130%	-14.0
Vibration Lab	E	4	3	46	0.99	108	2.4	194.6	82.7	36	230%	7.21	330.9	-222.9	-206%	-16.7
W/S FM/AH	E	10	9	137	1.58	324	2.4	115.4	48.8	46	106%	3.34	458.0	-134.0	-41%	-10.1
W/S AH/FM	E	5	3	68	1.21	108	1.6	150.3	95.0	40	238%	5.01	342.1	-234.1	-217%	-17.6

EM Lab	E	2	1	68	1.21	36	0.5	198.8	377.0	40	943%	6.63	452.4	-416.4	-1157%	-31.2
Survey LAB	E	6	3	59	1.13	108	1.8	135.7	73.5	40	184%	4.52	264.7	-156.7	-145%	-11.8
Transportation Lab	E	5	5	68	1.21	180	2.6	136.6	52.0	40	130%	4.55	311.8	-131.8	-73%	-9.9
Concreate/Geothermal	E	11	6	128	1.54	216	1.7	106.4	63.1	46	137%	3.08	395.1	-179.1	-83%	-13.4
SOM Lab	E	6	5	91	1.37	180	2.0	120.5	60.7	43	141%	3.74	338.8	-158.8	-88%	-11.9
HOD Cabin	E	2	0	22	0.62	0	0.0	71.3	#DIV/0!	36	#DIV/0!	2.64	59.1	-59.1	#DIV/0!	-4.4
Enginnering Library-3 FLOOR	E	29	22	486	3.18	792	1.6	222.7	136.6	46	297%	6.45	3136.6	-2345	-296%	-175.8
BSc First Floor																
Msc Org. P1-101	E	5	3	66.9	1.36	108	1.61	367	227	43	528%	11.38	760.9	-652.9	-605%	-49.0
TY Chem-102	E	5	4	66.9	1.36	144	2.15	442	205	43	477%	13.70	916.1	-772.1	-536%	-57.9
zoology-103	E	5	5	66.9	1.36	180	2.69	490	182	43	424%	15.20	1016.9	-836.9	-465%	-62.8
Chemistry-104	E	5	3	66.9	1.36	108	1.61	466	289	43	671%	14.45	966.1	-858.1	-795%	-64.4
Seminar Hall-106	E	9	8	127.3	1.74	288	2.26	195	86	46	187%	5.64	718.0	-430.0	-149%	-32.2

Library-110	E	10	9	127.3	1.74	324	2.55	85	33	46	73%	2.47	314.4	9.6	3%	0.7
Room-0111	E	5	4	66.9	1.36	144	2.15	218	101	43	236%	6.76	452.3	-308.3	-214%	-23.1
Msc P2-112	E	5	5	66.9	1.36	180	2.69	432	161	43	373%	13.40	896.3	-716.3	-398%	-53.7
WSS/WDC-113	E	5	5	66.9	1.36	180	2.69	299	111	43	258%	9.26	619.3	-439.3	-244%	-32.9
Msc+Store-114	E	3	3	66.9	1.36	108	1.61	283	175	43	408%	8.79	587.7	-479.7	-444%	-36.0
GYM/Sports Room-115	E	5	5	66.9	1.36	180	2.69	201	75	43	174%	6.23	416.6	-236.6	-131%	-17.7
GYM/Sporsts-116	E	5	5	66.9	1.36	180	2.69	294	109	43	254%	9.12	609.7	-429.7	-239%	-32.2
Boys Common Room-118	E	5	4	66.9	1.36	144	2.15	328	152	43	354%	10.16	679.7	-535.7	-372%	-40.2
Fy Bsc COMP-119	E	5	3	66.9	1.36	108	1.61	360	223	43	518%	11.15	745.8	-637.8	-591%	-47.8
SY Bsc CS-120	E	5	5	66.9	1.36	180	2.69	308	115	43	266%	9.56	639.2	-459.2	-255%	-34.4
ROOM-121	E	2	1	22.0	0.70	36	1.63	98	60	36	166%	3.61	79.6	-43.6	-121%	-3.3
BSc Second Floor																
Office-201A	E	2	2	42	0.92	72	1.7	75.5	44	36	122%	2.80	117	-45	-63%	-3.4
Head Cleark-201B	E	1	1	11.2	0.48	36	3.2	441	137	36	381%	16.33	183	-147	-408%	-11.0

IQAC Room-201C	E	1	1	12	0.50	36	3.0	53	18	36	49%	1.95	23	13	35%	0.9
Extension Cab-201D	E	1	1	10.5	0.46	36	3.4	45	13	36	36%	1.66	17	19	52%	1.4
NSS DEP-201E	E	1	1	10.5	0.46	36	3.4	27	8	36	22%	0.99	10	26	71%	1.9
Exam Room-201F	E	1	1	17.3	0.58	36	2.1	424	203	36	565%	15.71	271	-235	-653%	-17.6
PLACE&Exam-201G	E	1	1	11.2	0.48	36	3.2	427	133	36	369%	15.81	177	-141	-392%	-10.6
WDC cell-201H	E	1	1	11.2	0.48	36	3.2	284	88	36	245%	10.51	118	-82	-227%	-6.1
Principle-202	E	2	2	22.0	0.62	72	3.3	75	23	36	63%	2.76	61	11	16%	0.8
FY/SY-PCM/ZOO-203	E	5	3	66.9	1.20	108	1.6	337	208	40	521%	11.22	751	-643	-595%	-48.2
P-C/FC CHEM-204	E	5	3	66.9	1.20	108	1.6	200	124	40	310%	6.67	446	-338	-313%	-25.4
GIRLS COMM-205	E	5	5	66.9	1.20	180	2.7	476	177	40	442%	15.88	1062	-882	-490%	-66.1
TY-BSC IT-206	E	5	3	66.9	1.20	108	1.6	448	278	40	694%	14.94	999	-891	-825%	-66.9
SY BSC IT-207	E	5	5	66.9	1.20	180	2.7	253	94	40	235%	8.44	564	-384	-214%	-28.8
FY IT-208	E	3	1	66.9	1.20	36	0.5	240	445	40	1113%	7.99	534	-498	-1384%	-37.4

FY CS/IT-209	E	5	2	66.9	1.20	72	1.1	402	374	40	934%	13.41	897	-825	-1146%	-61.9
MSC IT-210	E	5	2	66.9	1.20	72	1.1	341	316	40	791%	11.35	759	-687	-955%	-51.6
STAFF ROOM-211	E	4	2	67.6	1.21	72	1.1	362	340	40	850%	12.07	816	-744	-1034%	-55.8
Engineering First Floor																
B1-101	E	8	4	64	0.35	144	2.26	301	133	36	370%	11.16	711	-567	-394%	-42.5
B1-102	E	2	2	26	0.86	72	2.72	403	148	36	411%	14.94	395	-323	-448%	-24.2
B1-103	E	5	2	31	0.35	72	2.34	330	141	36	392%	12.21	376	-304	-422%	-22.8
B1-104	E	5	2	32	0.35	72	2.27	464	204	36	567%	17.18	544	-472	-656%	-35.4
B1-105	E	5	5	32	0.34	180	5.71	274	48	36	133%	10.16	320	-140	-78%	-10.5
B1-106	E	4	4	33	0.34	144	4.41	228	52	36	144%	8.43	276	-132	-91%	-9.9
B1-107	E	5	5	32	0.35	180	5.68	216	38	36	105%	7.99	253	-73	-41%	-5.5
B1-108	E	11	9	66	0.41	324	4.91	304	62	36	172%	11.25	743	-419	-129%	-31.4
B1-109	E	3	2	17	0.27	72	4.21	57	14	36	38%	2.13	36	36	50%	2.7

B1-110	E	9	8	70	0.41	288	4.10	250	61	36	169%	9.25	650	-362	-126%	-27.2
B1-111	E	5	4	32	0.34	144	4.53	215	47	36	132%	7.97	253	-109	-76%	-8.2
B1-112	E	2	1	28	0.88	36	1.30	50	38	36	106%	1.85	51	-15	-42%	-1.1
B1-113	E	5	4	31	0.32	144	4.67	375	80	36	223%	13.90	428	-284	-197%	-21.3
B1-114	E	2	1	27	0.86	36	1.32	73	56	36	155%	2.72	74	-38	-106%	-2.9
B1-115	E	6	4	32	0.34	144	4.55	239	53	36	146%	8.84	280	-136	-95%	-10.2
B1-116	E	1	1	17	0.60	36	2.08	269	129	36	360%	9.97	173	-137	-379%	-10.2
Engineering Ground Floor																
B1-001	E	3	3	25.8	0.32	108	4.18	42.3	10.1	36	28%	1.57	40.5	67	62%	5.1
B1-02-03	E	10	9	62.4	0.38	324	5.20	217.6	41.9	36	116%	8.06	502.5	-179	-55%	-13.4
B1-007	E	5	4	29.9	0.33	144	4.81	441.8	91.8	36	255%	16.36	489.6	-346	-240%	-25.9
B1-008	E	5	5	29.9	0.33	180	6.02	441.8	73.4	36	204%	16.36	489.6	-310	-172%	-23.2
B1-009	E	5	5	29.9	0.33	180	6.02	474.6	78.9	36	219%	17.58	525.9	-346	-192%	-25.9
B1-011	E	2	2	20.1	0.29	72	3.59	63.0	17.5	36	49%	2.33	46.8	25	35%	1.9

B1-012	E	2	2	25.0	0.83	72	2.89	177.2	61.4	36	171%	6.56	163.8	-92	-127%	-6.9
B1-013	E	14	14	32.8	0.30	918	28.02	122.5	4.4	36	12%	4.54	148.7	769	84%	57.7
B1-014	E	15	15	26.2	0.30	864	32.95	73.8	2.2	36	6%	2.73	71.7	792	92%	59.4
B1-015	E	4	4	39.8	0.45	144	3.62	96.3	26.6	36	74%	3.57	141.8	2	2%	0.2
B1-016	E	1	1	25.0	0.82	36	1.44	130.2	90.2	36	251%	4.82	120.3	-84	-234%	-6.3
B1-017	E	6	6	30.8	0.32	216	7.02	57.4	8.2	36	23%	2.13	65.4	151	70%	11.3
G22	E	2	2	25.0	0.55	72	2.89	45.5	15.8	36	44%	1.69	42.1	30	42%	2.2
Engineering Second Floor																
B1-201	E	4	4	29	0.33	144	4.91	163.0	33	36	92%	6.04	177.0	-33	-23%	-2.5
B1-202	E	3	2	25	0.40	72	2.88	91.6	32	36	88%	3.39	84.9	-13	-18%	-1.0
B1-203	E	4	4	29	0.33	144	4.93	67.6	14	36	38%	2.50	73.0	71	49%	5.3
B1-204	E	4	2	29	0.33	72	2.47	192.8	78	36	217%	7.14	208.2	-136	-189%	-10.2
B1-206	E	13	12	71	0.40	432	6.10	191.5	31	36	87%	7.09	502.7	-71	-16%	-5.3
B1-207	E	4	3	29	0.33	108	3.70	312.9	85	36	235%	11.59	338.3	-230	-213%	-17.3

B1-208	E	10	10	69	0.38	360	5.24	139.4	27	36	74%	5.16	354.6	5	1%	0.4
B1-209	E	4	4	267	0.45	144	0.54	392.7	729	36	2025%	14.54	3888.0	-3744	-2600%	-280.8
B1-211	E	4	3	30	0.33	108	3.59	344.1	96	36	266%	12.74	383.7	-276	-255%	-20.7
B1-212	E	4	2	30	0.33	72	2.39	244.8	102	36	284%	9.07	273.0	-201	-279%	-15.1
B1-213	E	2	1	30	0.32	36	1.19	232.0	196	36	543%	8.59	260.8	-225	-624%	-16.9
B1-214	E	2	2	26	0.41	72	2.79	313.5	113	36	313%	11.61	300.1	-228	-317%	-17.1
B1-215	E	4	4	29	0.32	144	4.93	414.2	84	36	233%	15.34	447.8	-304	-211%	-22.8
Engineering Underground Floor																
Zoology lab	E	8	5	89	1.30	180	2.0	163	80.8	43	188%	5.04	451	-271.1	-151%	-20.3
Chemistry lab 1	E	6	4	89	1.29	144	1.6	239	147.8	43	344%	7.42	660	-516.1	-358%	-38.7
HOD Physics lab	E	7	7	67	1.15	252	3.8	134	35.7	40	89%	4.48	300	-48.0	-19%	-3.6
Chemistry lab 2	E	7	5	89	1.30	180	2.0	236	117.0	43	272%	7.30	653	-473.3	-263%	-35.5
Chemistry lab 3	E	2	2	44	0.92	72	1.6	57	34.6	36	96%	2.10	92	-20.3	-28%	-1.5
HOD Chemistry	E	2	2	21	0.5	72	3.4	70	20.9	36	58%	2.59	56	16.2	23%	1.2

lab 1					4											
Office Chemistry	E	2	1	21	0.54	36	1.7	41	24.7	36	69%	1.53	33	3.1	9%	0.2
Store Chemistry	E	2	2	21	0.54	72	3.4	35	10.4	36	29%	1.29	28	44.2	61%	3.3
Meter room(LS-10)	E	2	2	12	0.46	72	6.0	44	7.3	36	20%	1.63	20	52.4	73%	3.9
MPMC lab(LS-11)	E	3	3	44	0.92	108	2.5	323	131.8	36	366%	11.98	527	-419.1	-388%	-31.4
Research Chemistry(LS-12)	E	8	8	67	1.15	288	4.3	251	58.3	40	146%	8.36	559	-271.4	-94%	-20.4
LS-13	E	5	3	67	1.15	108	1.6	388	240.5	40	601%	12.94	866	-757.7	-702%	-56.8
LS-14	E	5	4	67	1.15	144	2.2	349	162.1	40	405%	11.63	778	-634.1	-440%	-47.6
Hostel First Floor																
102	E	2	2	28	0.96	72	2.6	268	104	36	290%	9.93	278.2	-206	-286%	-15.5
103	E	2	2	28	0.96	72	2.6	91	35	36	99%	3.38	94.6	-23	-31%	-1.7
104	E	2	1	28	0.96	36	1.3	135	105	36	291%	4.99	139.7	-104	-288%	-7.8
105	E	2	1	28	0.96	36	1.3	135	105	36	291%	4.99	139.9	-104	-289%	-7.8
106	E	2	2	28	0.96	72	2.6	101	39	36	109%	3.74	104.8	-33	-46%	-2.5

107	E	2	1	28	0.96	36	1.3	131	102	36	282%	4.83	135.4	-99	-276%	-7.5
108	E	2	1	28	0.96	36	1.3	153	119	36	331%	5.68	159.1	-123	-342%	-9.2
109	E	2	2	28	0.96	72	2.6	179	70	36	194%	6.63	185.8	-114	-158%	-8.5
110	E	2	2	28	0.96	72	2.6	174	68	36	188%	6.44	180.4	-108	-151%	-8.1
112	E	2	2	28	0.96	72	2.6	216	84	36	233%	7.99	223.8	-152	-211%	-11.4
113	E	2	2	28	0.96	72	2.6	198	77	36	214%	7.35	205.9	-134	-186%	-10.0
114	E	2	2	28	0.96	72	2.6	162	63	36	175%	6.00	168.0	-96	-133%	-7.2
115	E	2	1	28	0.96	36	1.3	202	157	36	437%	7.48	209.5	-174	-482%	-13.0
116	E	2	2	28	0.96	72	2.6	193	75	36	209%	7.15	200.4	-128	-178%	-9.6
117	E	2	1	28	0.96	36	1.3	107	83	36	232%	3.97	111.2	-75	-209%	-5.6
118	E	2	2	28	0.96	72	2.6	167	65	36	180%	6.18	173.0	-101	-140%	-7.6
Hostel Ground Floor																
1	E	2	1	28.0	0.96	36	1.29	201	156	36	434%	7.43	208	-172.1	-478%	-12.9
4	E	2	2	28.0	0.96	72	2.57	300	117	36	325%	11.13	312	-239.7	-333%	-18.0

5	E	1	1	28.0	0.96	36	1.29	249	194	36	539%	9.24	259	-222.8	-619%	-16.7
6	E	2	2	28.0	0.96	72	2.57	398	155	36	430%	14.73	413	-340.6	-473%	-25.5
7	E	2	2	28.0	0.96	72	2.57	369	144	36	399%	13.67	383	-311.0	-432%	-23.3
8	E	2	2	28.0	0.96	72	2.57	344	134	36	372%	12.76	357	-285.4	-396%	-21.4
9	E	2	2	28.0	0.96	72	2.57	359	140	36	388%	13.31	373	-300.7	-418%	-22.6
10	E	2	2	28.0	0.96	72	2.57	387	151	36	419%	14.34	402	-329.8	-458%	-24.7
11	E	4	3	72.0	1.46	108	1.50	187	125	43	291%	5.81	418	-310.5	-287%	-23.3
12	E	2	1	31.2	1.02	36	1.15	196	169	40	424%	6.52	203	-167.4	-465%	-12.6
13	E	5	4	90.0	1.56	144	1.60	199	124	46	271%	5.77	519	-375.4	-261%	-28.2
Hostel Second Floor																
201	E	2	2	28.0	0.96	72	2.6	336	131	36	363%	12.45	348.6	-277	-384%	-20.7
202	E	2	2	28.0	0.96	72	2.6	278	108	36	300%	10.28	288.0	-216	-300%	-16.2
203	E	2	2	28.0	0.96	72	2.6	423	165	36	457%	15.67	439.1	-367	-510%	-27.5
204	E	2	2	28.0	0.96	72	2.6	354	138	36	382%	13.10	367.1	-295	-410%	-22.1

205	E	2	2	28.0	0.96	72	2.6	262	102	36	283%	9.69	271.5	-200	-277%	-15.0
206	E	2	2	28.0	0.96	72	2.6	316	123	36	341%	11.69	327.6	-256	-355%	-19.2
207	E	2	1	28.0	0.96	36	1.3	308	240	36	665%	11.40	319.4	-283	-787%	-21.3
208	E	2	2	28.0	0.96	72	2.6	260	101	36	281%	9.64	270.0	-198	-275%	-14.8
209	E	2	2	28.0	0.96	72	2.6	357	139	36	386%	13.22	370.4	-298	-414%	-22.4
210	E	2	2	28.0	0.96	72	2.6	271	105	36	293%	10.04	281.2	-209	-291%	-15.7
211	E	2	1	28.0	0.96	36	1.3	279	217	36	602%	10.31	289.0	-253	-703%	-19.0
212	E	2	2	28.0	0.96	72	2.6	347	135	36	375%	12.84	359.8	-288	-400%	-21.6
214	E	2	2	28.0	0.96	72	2.6	317	123	36	343%	11.75	329.2	-257	-357%	-19.3
216	E	2	2	28.0	0.96	72	2.6	272	106	36	294%	10.06	281.9	-210	-292%	-15.7
217	E	2	2	28.0	0.96	72	2.6	389	152	36	421%	14.42	404.0	-332	-461%	-24.9
218	E	2	2	28.0	0.96	72	2.6	283	110	36	306%	10.48	293.5	-222	-308%	-16.6
Canteen	E	8	4	159	1.55	144	0.9	419	462.6	46	1006%	12.14	1931	-1787	-1241	-134.0
Workshop	E	18	5	161	1.55	180	1.1	297	265.5	46	577%	8.62	1385	-1205	-670%	-90.4

Energy, Green & Environment Audit Report: GMVIT, Tala, Raigad

Opportunity for Conservation of energy:

Electronic Ballast:

The conventional ballast may be replaced with electronic ballast. The magnetic ballast generally consumes 15 W of power; while the electronic ballast consumes just about 3 W and delivers 10% more light output. However, these ballasts are usually tuned to save about 15 W of power while providing slightly lower light output (about 5%).

Thus energy saving of over 30% can be realized by replacing conventional ballast by electronic ballast. The expected annual savings shall be around Rs 500/- per tube light; while the cost of installing a ballast shall be Rs 250/-

The saving potential can be computed as under.

Description	Unit	Value
Present Condition: Conventional Ballast		
Number of points	No	13
Rating of the point light	Watt	36
Rating of the switchgear	Watt	15
Power consumption of the lamp	Watt	51
Desirable Condition: Electronic Ballast		
Rating of the lamp	Watt	36
Rating of the switchgear	Watt	2
Power consumption of the lamp	Watt	32
Controllable Loss		
Loss	Watt	19
	%	37.3%
Saving Potential		
Cost of power	Rs/kWh	9.30
Operating period	Hr/Month	154
Diversity Factor	%	75%
Energy Saving	kWh/Month	38
	Rs/Month	266

The magnetic ballast can be replaced by electronic ballast; saving around Rs 266/- per month. The actual saving shall vary depending on the switching period of the luminaire.

The investment shall be Rs 5200/-; giving a payback period of 19 months.

LED Lamps:

A 15 W LED lamp can provide similar illumination level to that of 36 W TFL. It is thus possible to save about 33 W of power by replacing a 36 W TFL (with conventional ballast) with 15 W LED (with electronic starter). Thus energy saving of over 50% can be realized by replacing TFL with LED lamp. The expected annual savings shall be around Rs 720/- per tube light; while the cost of installing LED lamp shall be around Rs 1600/.

The payback for the individual lamp shall be around 27 months.

Chapter-VII

Ceiling Fans

7.1 Brief Description:

Total 654 ceiling fans are fitted out of which 618 found working. The rating is 80W. For comparison purpose 45W rating is considered.

7.2 Details:

The details are as below for 7 operating hours/day and 20 operating days per month. Hence, 140 operating hours per month are considered.

Description	Ceiling Fan Details			Energy Eff Fan	Saving/Month		
	F	W	@45 W power	32W@ speed 5	Rs 10.79/kWh		
				Rating	W	kWh	Rs
BSc Ground Floor (Engg Labs)							
Mc/shop	20	20	900	640	260	36.4	392.76
Thermal Lab	10	10	450	320	130	18.2	196.38
HT Lab	6	6	270	192	78	10.92	117.83
Vibrattion Lab	4	4	180	128	52	7.28	78.55
W/S FM/AH	10	10	450	320	130	18.2	196.38
W/S AH/FM	5	5	225	160	65	9.1	98.19
EM Lab	6	6	270	192	78	10.92	117.83
Survey LAB	6	6	270	192	78	10.92	117.83
Transportation Lab	5	5	225	160	65	9.1	98.19
Concreate/Geothermal	11	11	495	352	143	20.02	216.02
SOM Lab	8	8	360	256	104	14.56	157.10
HOD Cabin	2	2	90	64	26	3.64	39.28
Engineering Library3F	36	24	1080	768	312	43.68	471.31
BSc First Floor							

Msc Org. P1-101	5	5	225	160	65	9.1	98.19
TY Chem-102	5	5	225	160	65	9.1	98.19
zoology-103	3	3	135	96	39	5.46	58.91
Chemistry-104	3	2	90	64	26	3.64	39.28
Heath -105	1	1	45	32	13	1.82	19.64
Seminar Hall-106	10	8	360	256	104	14.56	157.10
Library-110	10	10	450	320	130	18.2	196.38
Room-0111	3	3	135	96	39	5.46	58.91
Msc P2-112	5	5	225	160	65	9.1	98.19
WSS/WDC-113	5	5	225	160	65	9.1	98.19
Msc+Store-114	5	4	180	128	52	7.28	78.55
GYM/Sports Room-115	5	5	225	160	65	9.1	98.19
GYM/Sporsts-116	5	5	225	160	65	9.1	98.19
Boys Common Room-118	5	5	225	160	65	9.1	98.19
Fy Bsc COMP-119	5	5	225	160	65	9.1	98.19
SY Bsc CS-120	5	5	225	160	65	9.1	98.19
ROOM-121	2	2	90	64	26	3.64	39.28
BSc Second Floor							
Office-201A	4	4	180	128	52	7.28	78.55
Head Cleark-201B	1	1	45	32	13	1.82	19.64
IQAC Room-201C	1	1	45	32	13	1.82	19.64
Extension Cab-201D	1	1	45	32	13	1.82	19.64
NSS DEP-201E	1	1	45	32	13	1.82	19.64
Exam Room-201F	1	1	45	32	13	1.82	19.64
PLACE&Exam-201G	1	1	45	32	13	1.82	19.64
WDC cell-201H	1	1	45	32	13	1.82	19.64
Principle-202	2	1	45	32	13	1.82	19.64
FY/SY-PCM/ZOO-203	5	3	135	96	39	5.46	58.91
P-C/FC CHEM-204	5	5	225	160	65	9.1	98.19
GIRLS COMM-205	5	5	225	160	65	9.1	98.19
TY-BSC IT-206	5	5	225	160	65	9.1	98.19
SY BSC IT-207	5	4	180	128	52	7.28	78.55
FY IT-208	5	4	180	128	52	7.28	78.55
FY CS/IT-209	5	5	225	160	65	9.1	98.19
MSC IT-210	5	5	225	160	65	9.1	98.19
STAFF ROOM-211	6	6	270	192	78	10.92	117.83
Engineering First Floor							
B1-101	10	10	450	320	130	18.2	196.38
B1-102	2	2	90	64	26	3.64	39.28
B1-103	5	5	225	160	65	9.1	98.19
B1-104	5	4	180	128	52	7.28	78.55

B1-105	5	5	225	160	65	9.1	98.19
B1-106	5	5	225	160	65	9.1	98.19
B1-107	5	5	225	160	65	9.1	98.19
B1-108	11	11	495	352	143	20.02	216.02
B1-109	2	2	90	64	26	3.64	39.28
B1-110	10	10	450	320	130	18.2	196.38
B1-111	6	5	225	160	65	9.1	98.19
B1-112	2	2	90	64	26	3.64	39.28
B1-113	5	5	225	160	65	9.1	98.19
B1-114	1	1	45	32	13	1.82	19.64
B1-115	6	5	225	160	65	9.1	98.19
B1-116	1	1	45	32	13	1.82	19.64
Engineering Ground Floor							
B1-001	2	2	90	64	26	3.64	39.28
B1-02-03	10	9	405	288	117	16.38	176.74
B1-007	5	5	225	160	65	9.1	98.19
B1-008	5	5	225	160	65	9.1	98.19
B1-009	5	5	225	160	65	9.1	98.19
B1-011	3	3	135	96	39	5.46	58.91
B1-012	2	2	90	64	26	3.64	39.28
B1-015	4	4	180	128	52	7.28	78.55
B1-016	2	2	90	64	26	3.64	39.28
B1-017	6	6	270	192	78	10.92	117.83
G22	2	2	90	64	26	3.64	39.28
Engineering Second Floor							
B1-201	6	6	270	192	78	10.92	117.83
B1-202	3	3	135	96	39	5.46	58.91
B1-203	6	6	270	192	78	10.92	117.83
B1-204	6	6	270	192	78	10.92	117.83
B1-206	13	13	585	416	169	23.66	255.29
B1-207	3	3	135	96	39	5.46	58.91
B1-208	12	12	540	384	156	21.84	235.65
B1-209	4	4	180	128	52	7.28	78.55
B1-211	6	5	225	160	65	9.1	98.19
B1-212	6	6	270	192	78	10.92	117.83
B1-213	6	6	270	192	78	10.92	117.83
B1-214	4	4	180	128	52	7.28	78.55
B1-215	6	6	270	192	78	10.92	117.83
B1-216	1	1	45	32	13	1.82	19.64
Engineering Underground Floor							

Zoology lab	8	5	225	160	65	9.1	98.19
Chemistry lab 1	6	4	180	128	52	7.28	78.55
HOD Physics lab	7	7	315	224	91	12.74	137.46
Chemistry lab 2	7	5	225	160	65	9.1	98.19
Chemistry lab 3	2	2	90	64	26	3.64	39.28
HOD Chemistry lab 1	2	2	90	64	26	3.64	39.28
Office Chemistry	2	1	45	32	13	1.82	19.64
Store Chemistry	2	2	90	64	26	3.64	39.28
Meter room(LS-10)	1	1	45	32	13	1.82	19.64
MPMC lab(LS-11)	3	2	90	64	26	3.64	39.28
Research Chemistry(LS-12)	6	6	270	192	78	10.92	117.83
LS-13	5	5	225	160	65	9.1	98.19
LS-14	4	3	135	96	39	5.46	58.91
Hostel Ground Floor							
1	2	1	45	32	13	1.82	19.64
3	1	1	45	32	13	1.82	19.64
4	2	2	90	64	26	3.64	39.28
5	2	2	90	64	26	3.64	39.28
6	2	2	90	64	26	3.64	39.28
7	2	2	90	64	26	3.64	39.28
8	2	2	90	64	26	3.64	39.28
9	2	2	90	64	26	3.64	39.28
10	2	2	90	64	26	3.64	39.28
11	2	2	90	64	26	3.64	39.28
12	2	1	45	32	13	1.82	19.64
13	6	4	180	128	52	7.28	78.55
Hostel First Floor							
102	2	2	90	64	26	3.64	39.28
103	2	1	45	32	13	1.82	19.64
104	1	1	45	32	13	1.82	19.64
106	2	2	90	64	26	3.64	39.28
107	2	2	90	64	26	3.64	39.28
108	2	2	90	64	26	3.64	39.28
109	2	2	90	64	26	3.64	39.28
110	2	2	90	64	26	3.64	39.28
112	2	2	90	64	26	3.64	39.28
113	2	1	45	32	13	1.82	19.64
114	2	2	90	64	26	3.64	39.28
115	2	2	90	64	26	3.64	39.28
116	2	2	90	64	26	3.64	39.28
117	2	1	45	32	13	1.82	19.64
118	1	1	45	32	13	1.82	19.64

Hostel Second Floor							
201	2	2	90	64	26	3.64	39.28
202	2	2	90	64	26	3.64	39.28
203	2	2	90	64	26	3.64	39.28
204	2	2	90	64	26	3.64	39.28
205	2	2	90	64	26	3.64	39.28
206	2	2	90	64	26	3.64	39.28
207	2	1	45	32	13	1.82	19.64
208	2	2	90	64	26	3.64	39.28
209	2	2	90	64	26	3.64	39.28
210	2	2	90	64	26	3.64	39.28
211	2	1	45	32	13	1.82	19.64
212	2	2	90	64	26	3.64	39.28
213	2	1	45	32	13	1.82	19.64
214	2	2	90	64	26	3.64	39.28
215	2	1	45	32	13	1.82	19.64
216	2	2	90	64	26	3.64	39.28
217	2	2	90	64	26	3.64	39.28
218	2	2	90	64	26	3.64	39.28
Canteen	10	10	450	320	130	18.2	196.38
Workshop	9	8	360	256	104	14.56	157.10

7.6 Economics:

Replacing old fans with new energy efficient fans can be considered. These fans save energy while delivering similar air flows.

1. The cost of replacement of 596 working ceiling fans (excluding non-working, wall and exhaust fans) shall be around Rs 20,86,000/- giving a payback period of around 15 years. It is calculated by considering 45W consumption on average operation basis. The cost of energy efficient fan is considered as Rs. 3500 per unit.

The expected saving potential is around Rs 11704/- per month.

Thus, the investment is high and the payback period is not much attractive.

Chapter-VIII

Miscellaneous Consumers

8.1 Brief Description:

The other consumers include pumps, machine tools in the work shop and machine shop, xerox machines, printers and computers. The consumption of above equipment was not possible due to unavoidable circumstances.

GREEN & ENVIRONMENT AUDIT

Chapter-IX

Water Management

The institute has its own water source, well near the campus. Also, the water is supplied from river to the college. This water is stored in the underground tank and thereafter it is pumped to the respective buildings by means of the pumping system.

The separate water meters need to be installed for efficient management.

Water purifiers are installed at each floor in the building.

Rain water harvesting need to be practiced in the campus.

Chapter - X

Air Quality Measurement

The air quality was checked by measuring the Carbon Dioxide and VOC contents at various locations in the college classrooms and the administrative areas.

Location(RooM No)	CO2			TVOC		
	MIN	MAX	AVG	MIN	MAX	AVG
Engg Ground Foor						
B1-001			385	0.011	0.022	0.0165
B1-02-03	393	399	396	0.011	0.024	0.0175
B1-004						
B1-005						
B1-006						
B1-007			385	0.01	0.024	0.017
B1-008			385	0.01	0.02	0.015
B1-009			385	0.011	0.024	0.0175
B1-010			385	0.01	0.023	0.0165
B1-011			385	0.011	0.024	0.0175
B1-012			385	0.01	0.024	0.017
B1-013			385	0.012	0.024	0.018
B1-014			385	0.01	0.023	0.0165
B1-015			385	0.01	0.024	0.017
B1-016			385	0.01	0.024	0.017
B1-017			385	0.01	0.024	0.017
G22			385	0.011	0.024	0.0175
Engg First Foor						
B1-101			385	0.01	0.024	0.017
B1-102			385	0.011	0.023	0.017
B1-103			385	0.01	0.024	0.017
B1-104			385	0.01	0.024	0.017
B1-105	395	398	396.5	0.01	0.023	0.0165
B1-106	386	394	390	0.012	0.024	0.018
B1-107	385	389	387	0.01	0.024	0.017
B1-108	385	388	386.5	0.01	0.023	0.0165
B1-109	385	390	387.5	0.01	0.024	0.017
B1-110	385	387	386	0.01	0.024	0.017
B1-111	385	390	387.5	0.011	0.024	0.0175
B1-112			385	0.01	0.024	0.017

B1-113			385	0.01	0.024	0.017
B1-114	385	387	386	0.01	0.024	0.017
B1-115			385	0.01	0.024	0.017
B1-116			385	0.012	0.024	0.018
Engg Second Foor						
B1-201	385	386		0.01	0.021	0.0155
B1-202			385	0.01	0.024	0.017
B1-203	385	388	386.5	0.01	0.024	0.017
B1-204	387	397	392	0.01	0.024	0.017
B1-205						
B1-206	385	388	386.5	0.01	0.024	0.017
B1-207	410	414	412	0.014	0.024	0.019
B1-208			385	0.013	0.023	0.018
B1-209	385	887	636	0.011	0.022	0.0165
B1-210						
B1-211	385	889	637	0.01	0.024	0.017
B1-212	388	391	389.5	0.01	0.024	0.017
B1-213	386	389	387.5	0.011	0.024	0.0175
B1-214			385	0.012	0.024	0.018
B1-215	385	387	386	0.01	0.022	0.016
B1-216	385	387	386	0.012	0.024	0.018
Engg UG Foor						
Zoology lab	387	386	386.5	0.01	0.024	0.017
Chemistry lab 1			385	0.01	0.024	0.017
HOD Physics lab			385	0.01	0.024	0.017
Chemistry lab 2	389	385	387	0.012	0.023	0.0175
Chemistry lab 3	386	385	385.5	0.011	0.022	0.0165
HOD Chemistry lab 1			385	0.01	0.024	0.017
Office Chemistry			385	0.011	0.023	0.017
Store Chemistry			385	0.011	0.022	0.0165
HOD Chemistry lab 2			385	0.01	0.024	0.017
Meter room(LS-10)			385	0.01	0.023	0.0165
MPMC lab(LS-11)			385	0.01	0.024	0.017
Research Chemistry(LS-12)			385	0.01	0.024	0.017
LS-13			385	0.012	0.024	0.018
LS-14			385	0.01	0.023	0.0165
BSc First Foor						
Msc Org. P1-101			385	0.01	0.023	0.0165
TY Chem-102			385	0.011	0.024	0.0175
zoology-103			385	0.011	0.024	0.0175
Chemistry-104			385	0.011	0.024	0.0175
Heath -105	385	386	385.5	0.011	0.024	0.0175
Seminar Hall-106			385	0.011	0.024	0.0175

toilet- 107						
Not Available-108						
Not Available-109						
Library-110			385	0.012	0.024	0.018
Room-0111			385	0.01	0.022	0.016
Msc P2-112			385	0.011	0.024	0.0175
WSS/WDC-113			385	0.01	0.024	0.017
Msc+Store-114			385	0.01	0.024	0.017
GYM/Sports Room-115			385	0.011	0.024	0.0175
GYM/Sporsts-116			385	0.012	0.023	0.0175
Toilet-117						
Boys Common Room-118			385	0.01	0.024	0.017
Fy Bsc COMP-119			385	0.01	0.024	0.017
SY Bsc CS-120			385	0.011	0.024	0.0175
ROOM-121	385	387	386	0.01	0.024	0.017
BSc Second Foor						
Office-201A			385	0.01	0.024	0.017
Head Cleark-201B			385	0.01	0.024	0.017
IQAC Room-201C			385	0.01	0.024	0.017
Extension Cab-201D			385	0.01	0.024	0.017
NSS DEP-201E			385	0.01	0.024	0.017
Exam Room-201F			385	0.01	0.024	0.017
PLACE&Exam-201G			385	0.01	0.024	0.017
WDC cell-201H			385	0.011	0.024	0.0175
Principle-202			385	0.01	0.024	0.017
FY/SY-PCM/ZOO-203	387	386	386.5	0.011	0.023	0.017
P-C/FC CHEM-204			385	0.01	0.024	0.017
GIRLS COMM-205			385	0.011	0.024	0.0175
TY-BSC IT-206	386	385	385.5	0.01	0.023	0.0165
SY BSC IT-207			385	0.01	0.024	0.017
FY IT-208			385	0.01	0.024	0.017
FY CS/IT-209			385	0.01	0.024	0.017
MSC IT-210			385	0.01	0.024	0.017
STAFF ROOM-211	387	385	386	0.01	0.024	0.017
BSc Ground (Engg abs) Foor						
Mc/shop	387	385		0.01	0.023	0.0165
Thermal Lab			385	0.01	0.024	0.017
HT Lab			385	0.01	0.024	0.017
Vibrattion Lab			385	0.01	0.024	0.017
W/S FM/AH			385	0.01	0.023	0.0165
W/S AH/FM			385	0.01	0.024	0.017
EM Lab			385	0.011	0.024	0.0175

Survey LAB			385	0.011	0.023	0.017
Transportation Lab			385	0.011	0.023	0.017
Concreate/Geothermal	387	385		0.011	0.024	0.0175
SOM Lab	389	385		0.011	0.024	0.0175
HOD Cabin			385	0.,011	0.024	0.024
Enginnering Library-3F			385	0.012	0.024	0.018
Hostel First Foor						
101			385	0.01	0.024	0.017
102	386	385		0.011	0.024	0.0175
103			385	0.01	0.024	0.017
104			385	0.01	0.024	0.017
105			385	0.01	0.024	0.017
106			385	0.01	0.024	0.017
107			385	0.01	0.024	0.017
108			385	0.012	0.024	0.018
109			385	0.011	0.021	0.016
110			385	0.012	0.024	0.018
111	387	386		0.011	0.023	0.017
112	387	385		0.013	0.023	0.018
113			385	0.01	0.024	0.017
114			385	0.01	0.022	0.016
115			385	0.011	0.024	0.0175
116	386	385		0.01	0.024	0.017
117	386	385		0.01	0.024	0.017
Hostel Second Foor						
201			385	0.01	0.024	0.017
202			385	0.01	0.024	0.017
203			385	0.01	0.023	0.0165
204			385	0.011	0.023	0.017
205			385	0.01	0.023	0.0165
206	388	386	387	0.01	0.023	0.0165
207			385	0.01	0.023	0.0165
208			385	0.01	0.024	0.017
209			385	0.01	0.021	0.0155
210	387	385	386	0.013	0.024	0.0185
211			385	0.01	0.023	0.0165
212			385	0.013	0.023	0.018
213			385	0.01	0.024	0.017
214	386	385	385.5	0.01	0.024	0.017
215			385	0.011	0.023	0.017
216			385	0.012	0.023	0.0175
217			385	0.011	0.024	0.0175
218			385	0.1	0.024	0.062

Hostel Ground Foor						
1	387	385	386	0.011	0.022	0.0165
2			NA			NA
3	386	385	385.5	0.01	0.024	0.017
4			385	0.011	0.023	0.017
5			385	0.01	0.024	0.017
6	387	386	386.5	0.012	0.023	0.0175
7			385	0.01	0.024	0.017
8			385	0.01	0.024	0.017
9			385	0.01	0.024	0.017
10			385	0.013	0.022	0.0175
11			385	0.013	0.024	0.0185
12			385	0.01	0.022	0.016
13			385	0.011	0.024	0.0175
CANTEEN			385	0.023	0.013	0.018
WORKSHOP			385	0.023	0.01	0.0165

Observations

The Carbon dioxide and VOC levels are within the limits at all the places. The standard norm is to maintain the Carbon dioxide level below 1000 ppm and VOC level below 400 ppm.

Chapter - XI

Waste Generation and Management

Sewage and waste water

The sewage is fed to the common channel of village sewage waste pipeline. The village management treats the sewage with due charges.

Solid Waste

The organic as well as inorganic waste is segregated in the college premises. The organic waste is used to generate the manure by composting. The non-organic waste is collected in the garbage bins and disposed-off through the village waste management system.

E-waste

The college is in search of NGO for E-waste management.
The institute should prefer the installation of solar system for BSc building, Engineering building and hostel. It is possible to cut down the cost of

Chapter-XII

Renewable Energy

12.1 Brief Description:

The institute should prefer the installation of solar system for BSc building, Engineering building and hostel.

It is possible to cut down the cost of electricity to great extent.

At present the institute is using solar water heating system for hostel.

Shri. Gopinath Mahadeo Vedak Pratishthan's

G. M. VEDAK INSTITUTE OF TECHNOLOGY, TALA

Cleaning Drive at Anandwadi

The **importance of cleanliness** in our lives cannot be denied. Maintaining a clean environment is for the health of all humans, as their health completely depends on the atmosphere. A bad environment is solely responsible for spoiling the health of the people around. As a part of NSS activity G.M.V.I.Tala conducted cleanness drive at Anandwadi, Tal.Tala.

Total 45 students were participated in the drive and 14 Teaching and non-Teaching faculty was present for this cleanness drive. This cleanness drive arranged with collaboration of Nagarpanchayat Tala on the occasion of Swacha Bharat Abhiyan Dated 19th Sep.2019 to 29th Oct.2019.

Tala
Raigad

G.M. Vedak Institute Of Technology
Tala
Raigad

19/04/2019

NSS PO

Shri. Gopinath Mahadeo Vedak Pratishthan's

G. M. VEDAK INSTITUTE OF TECHNOLOGY, TALA

Social campaign on Health & Cleanness at Anandwadi

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Total 23 students were participated in the drive and 6 Teaching and non-Teaching faculty was present for this cleanness drive. This rally was conducted on 22nd Feb.2019.

02/02/2019

NSS PO

Shri. Gopinath Mahadeo Vedak Pratishthan's

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