7.1.6 - Quality audits on environment and energy are regularly undertaken by the institution

INDEX

ENGRESS SERVICES

Yashashree, 26, Nirmal Bag Society, Near Muktangan English School, Parvati, Pune 411 009
Tel: 09890444795 Email: engress123@gmail.com
UDYAM Regn. No: UDYAM-MH-26-0135636,
MEDA Regn. No: ECN/2023-24/CR-43/1709
ISO: 9001-2015 Certified (Cert No: 23EQKC13),
ISO: 14001-2015 Certified (Cert No: 23EEKW20)

ENERGY AUDIT CERTIFICATE

Certificate No: ES/PCCCS/23-24/01 **Date: 1/6/2024**

This is to certify that we have conducted Energy Audit at Kamala Educational Society's, Pratibha College of Commerce & Computer Studies, Chinchwad, Pune in the year 2023-24.

.The Institute has adopted following Energy Efficient Practices:

- Usage of Energy Efficient LED Fittings
- Usage of Energy Efficient BEE STAR Rated Equipment
- Maximum usage of Day Lighting
- Installation of 25 kWp Roof Top Solar PV Plant.

We appreciate the support of Management, involvement of faculty members and students in the process of making the Campus Energy Efficient.

For Engress Services,

A Y Mehendale,
B E-Mechanical, M Tech- Energy
BEE Certified Energy Auditor, EA-8192

ENGRESS SERVICES * PUNE *

Pratibha College of Commerce & Computer Studies ★ Chinchwad, Pune-19

ENGRESS SERVICES

Yashashree, 26, Nirmal Bag Society, Near Muktangan English School, Parvati, Pune 411 009
Tel: 09890444795 Email: engress123@gmail.com
UDYAM Regn. No: UDYAM-MH-26-0135636,
MEDA Regn. No: ECN/2023-24/CR-43/1709
ISO: 9001-2015 Certified (Cert No: 23EQKC13),
ISO: 14001-2015 Certified (Cert No: 23EEKW20)

GREEN AUDIT CERTIFICATE

Certificate No: ES/PCCCS/23-24/02 **Date: 1/6/2024**

This is to certify that we have conducted Green Audit at Kamala Educational Society's, Pratibha College of Commerce & Computer Studies, Chinchwad, Pune in the year 2023-24.

The College has adopted Energy Efficient, Green & Sustainable Practices:

- Usage of Energy Efficient LED Fittings
- Usage of Energy Efficient BEE STAR Rated equipment
- Installation of 25 kWp Roof Top Solar PV Plant & Solar Street Lights
- Segregation of Waste at source
- Bio Composting Bed for Conversion of Leafy Waste
- Provision of Sanitary Waste Incinerator, for Disposal of Sanitary Waste
- Installation of Rain Water Management Project
- Good Internal Road
- Internal Tree Plantation
- Provision of Ramp & Lift for Divyangajan
- Creation of awareness on Energy Conservation by Display of Posters

We appreciate the support of Management, involvement of faculty members and students in the process of Energy Conservation & making the campus Green.

For Engress Services,

A Y Mehendale,
B E- Mech, M Tech-Energy, Certified Energy Auditor, EA-8192
ASSOCHAM GEM Certified Professional: GEM: 22/788

ENGRESS SERVICES PUNE

Pratibha College of Commerce & Computer Studies Chinchwad, Pune-19

ENGRESS SERVICES

Yashashree, 26, Nirmal Bag Society, Near Muktangan English School, Parvati, Pune 411 009
Tel: 09890444795 Email: engress123@gmail.com
UDYAM Regn. No: UDYAM-MH-26-0135636,
MEDA Regn. No: ECN/2023-24/CR-43/1709
ISO: 9001-2015 Certified (Cert No: 23EQKC13),
ISO: 14001-2015 Certified (Cert No: 23EEKW20)

ENVIRONMENTAL AUDIT CERTIFICATE

Certificate No: ES/PCCCS/23-24/03 **Date: 18/6/2024**

This is to certify that we have conducted Environmental Audit at Kamala Educational Society's, Pratibha College of Commerce & Computer Studies, Chinchwad, Pune in the year 2023-24.

The College has adopted Environment Friendly Practices:

- Usage of Energy Efficient LED Fittings
- Usage of Energy Efficient BEE STAR Rated equipment
- Installation of 25 kWp Roof Top Solar PV Plant & Solar Street Lights
- Segregation of Waste at source
- Bio Composting Bed for Conversion of Leafy Waste
- Provision of Sanitary Waste Incinerator, for Disposal of Sanitary Waste
- Installation of Rain Water Management Project
- Internal Tree Plantation
- Creation of awareness on Energy Conservation by Display of Posters

We appreciate the support of Management, involvement of faculty members and students in the process of Energy Conservation & making the campus Green & Eco Friendly.

For Engress Services,

ENGRESS SERVICES PUNE

A Y Mehendale,
B E- Mech, M Tech-Energy, Certified Energy Auditor, EA-8192
ASSOCHAM GEM Certified Professional: GEM: 22/788

Pratibha College of Commerce & Computer Studies Chinchwad, Pune-19

ENERGY AUDIT REPORT

Kamala Education Society's,

PRATIBHA COLLEGE OF COMMERCE & COMPUTER STUDIES,

Off Mumbai Pune Road, Chinchwad, Pune 411 019

KAMALA
Education Society

Year: 2023-24

Prepared by:

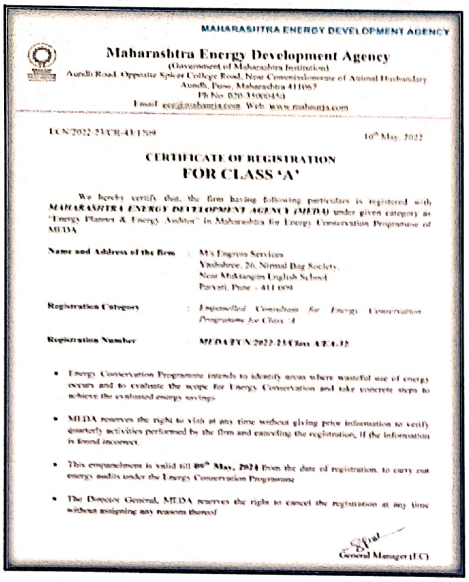
ENGRESS SERVICES

Yashashree, 26, Nirmal Bag Society
Near Muktangan English School, Parvati, Pune 411009
Phone: 09890444795 Email: engress123@gmail.com

ENGRESS SERVICES PUNE

Pratibha College of Commerce & Computer Studies Chinchwad, Pune-19

REGISTRATION CERTIFICATES: BEE, UDYAM, MEDA, ISO-9001 & 14001:



MAHARASHTRA ENERGY DEVELOPMENT AGENCY

Maharashtra Energy Development Agency
(Government of Maharashtra Institution)
Aundh Road, Opposite Spicer College Road, Near Conventionhouse of Animal Husbandry
Aundh, Pune, Maharashtra 411067
Ph No: 020-35000450
Email: ee@mahaurja.com Web: www.mahaurja.com

EC/N/2022-23/CR-43/1569 10th May, 2022

CERTIFICATE OF REGISTRATION
FOR CLASS 'A'

We hereby certify that, the firm having following particulars is registered with MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA) under given category as "Energy Planner & Energy Auditor" in Maharashtra for Energy Conservation Programme of MEDA

Name and Address of the firm : M/s Engress Services
Yashshree, 26, Nirmal Bag Society,
Near Maktangan English School
Parvati, Pune - 411 009

Registration Category : Empanelled Consultant for Energy Conservation Programme for Class 'A'

Registration Number : MEDA/EC/N/2022-23/Class 'A'/CR-43

- Energy Conservation Programme intends to identify areas where wasteful use of energy occurs and to evaluate the scope for Energy Conservation and take concrete steps to achieve the evaluated energy savings.
- MEDA reserves the right to visit at any time without giving prior information to verify quarterly activities performed by the firm and cancelling the registration, if the information is found incorrect.
- This empanelment is valid till 09th May, 2024 from the date of registration, to carry out energy audits under the Energy Conservation Programme.
- The Director General, MEDA reserves the right to cancel the registration at any time without assigning any reasons thereof.

General Manager (EC)

Regn. No. EA-8192 No. 2942

National Productivity Council
(National Certifying Agency)
PROVISIONAL CERTIFICATE

This is to certify that Mr / Ms. Achyut Yashavant Mehendale
son / daughter of Mr. Yashavant
has passed the National Certification Examination for Energy Auditors in April - 2007, conducted on behalf of the Bureau of Energy Efficiency, Ministry of Power, Government of India.

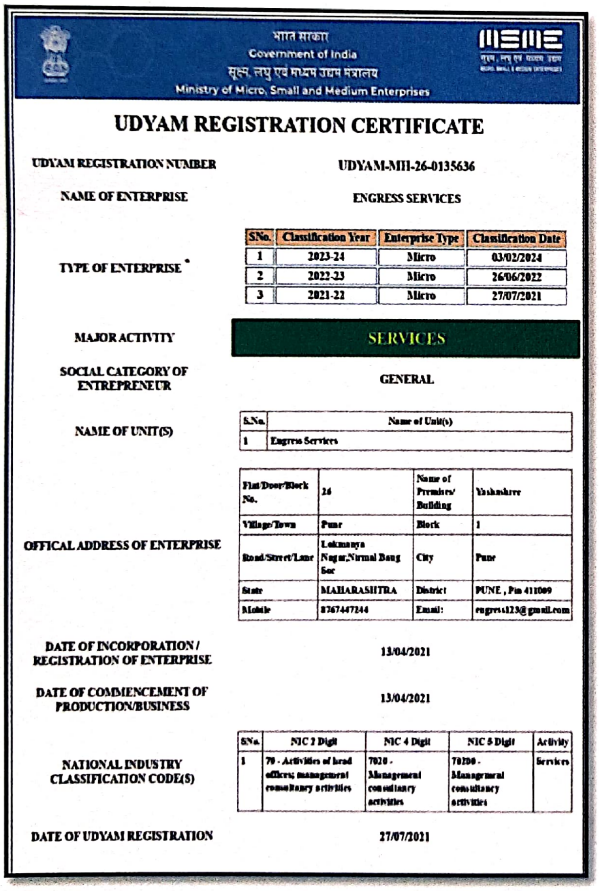
He / She is qualified as Certified Energy Manager as well as Certified Energy Auditor

He / She shall be entitled to practice as Energy Auditor under the Energy Conservation Act 2001, subject to the fulfillment of qualifications for the Accredited Energy Auditor and issue of certificate of Accreditation by the Bureau of Energy Efficiency under the said Act.

This certificate is valid till the issuance of an official certificate by the Bureau of Energy Efficiency.

Place : Chennai, India
Date : 10th August 2007

Controller of Examination



भारत सरकार
Government of India
सूक्ष्म, लघु एवं मध्यम उद्यम मंत्रालय
Ministry of Micro, Small and Medium Enterprises

UDYAM REGISTRATION CERTIFICATE

UDYAM REGISTRATION NUMBER	UDYAM-MH-26-0135636
NAME OF ENTERPRISE	ENGRESS SERVICES

TYPE OF ENTERPRISE *

S.No.	Classification Year	Enterprise Type	Classification Date
1	2023-24	Micro	03/02/2024
2	2022-23	Micro	26/06/2022
3	2021-22	Micro	27/07/2021

MAJOR ACTIVITY: SERVICES

SOCIAL CATEGORY OF ENTREPRENEUR: GENERAL

NAME OF UNIT(S)

S.No.	Name of Unit(s)
1	Engress Services

OFFICAL ADDRESS OF ENTERPRISE

Flat/Door/Block No.	26	Name of Premises/ Building	Yashashree
Village/Town	Pune	Block	1
Road/Street/Lane	Lokmanya Nagar,Nirmal Baug Soc	City	Pune
State	MAHARASHTRA	District	PUNE , Pin 411009
Mobile	8767447244	Email:	engress123@gmail.com

DATE OF INCORPORATION / REGISTRATION OF ENTERPRISE: 13/04/2021

DATE OF COMMENCEMENT OF PRODUCTION/BUSINESS: 13/04/2021

NATIONAL INDUSTRY CLASSIFICATION CODE(S)

S.No.	NIC 2 Digit	NIC 4 Digit	NIC 5 Digit	Activity
1	70 - Activities of head offices; management consultancy activities	7020 - Management consultancy activities	70200 - Management consultancy activities	Services

DATE OF UDYAM REGISTRATION: 27/07/2021

Certificate of Registration

This is to Certify that
Environmental Management System of

ENGRESS SERVICES

26, YASHASHREE, BLOCK 1, LOKMANYA NAGAR, NIRMAL BAUG SOC., PARVATI, PUNE- 411009, MAHARASHTRA, INDIA

has been assessed and found to conform to the requirements of
ISO 14001:2015
for the following scope :

CONSULTANCY SERVICES FOR ENERGY AUDIT, GREEN AUDIT & ENVIRONMENTAL AUDIT IN EDUCATIONAL INSTITUTIONS & SUBMISSION OF AUDIT CERTIFICATE AND REPORT.

Certificate No : 23EEKW20
Initial Registration Date : 29/03/2023 Issuance Date : 29/03/2023
Date of Expiry : 28/03/2026
1st Surve. Due : 23/02/2024 2nd Surve. Due : 28/02/2025

Director

Magnitude Management Services Pvt. Ltd.

Certificate of Registration

This is to Certify that
Quality Management System of

ENGRESS SERVICES

26, YASHASHREE, BLOCK 1, LOKMANYA NAGAR, NIRMAL BAUG SOC, PARVATI, PUNE- 411009, MAHARASHTRA, INDIA

has been assessed and found to conform to the requirements of
ISO 9001:2015
for the following scope :

CONSULTANCY SERVICES FOR ENERGY AUDIT, GREEN AUDIT & ENVIRONMENTAL AUDIT IN EDUCATIONAL INSTITUTIONS & SUBMISSION OF AUDIT CERTIFICATE AND REPORT.

Certificate No : 23EQKC13
Initial Registration Date : 27/03/2023 Issuance Date : 27/03/2023
Date of Expiry : 26/03/2026
1st Surve. Due : 23/02/2024 2nd Surve. Due : 27/02/2025

Director

Magnitude Management Services Pvt. Ltd.

Pratibha College of Commerce & Computer Studies ★ Chinchwad, Pune-19

INDEX

Pratibha College of Commerce & Computer Studies
Chinchwad, Pune-19

ACKNOWLEDGEMENT

We at Engress Services, Pune, express our sincere gratitude to the management of Kamala Education Society's, Pratibha College of Commerce & Computer Studies, Pune for awarding us the assignment of Energy Audit of their campus for the Year: 2023-24.

We are thankful to all staff members for helping us during the field study.

EXECUTIVE SUMMARY

1. Kamala Education Society's, Pratibha College of Commerce & Computer Studies, Pune consumes Energy in the form of **Electrical Energy;** used for various gadgets, Office & other facilities.

2. Present Connected Load & Energy Consumption:

No	Particulars	Value	Unit
1	Total Connected Load	**121**	kW
2	Annual Energy Purchased	**75701**	kWh

3. Per Capita Energy Consumption:

No	Particulars	Value	Unit
1	Total Annual Energy Purchased	75701	kWh
2	Energy generated by Solar PV Plant	30000	kWh
3	Total Energy Consumed =1+2	105701	kWh
4	No of students studying in the College	**3280**	Nos
5	Per Capita Energy Consumption **=(3) / (4)**	**32.22**	kWh/Annum

4. Study of Lighting Power Density & % Usage of LED Lighting:

No	Particulars	Value	Unit
1	Lighting Power density	**2.78**	W/m^2
2	% of Usage of LED Lighting to Total Lighting Load	**100**	%

5. Renewable Energy & Energy Efficiency Projects:

- Usage of Energy Efficient LED fittings
- Installation of **25 kWp Roof Top** Solar PV Plant

6. Assumptions:

1. Energy consumption computed on Load Utilization Factor
2. **1 kWh** of Electrical Energy releases **0.9 Kg** of CO_2 into atmosphere
3. **1 kWp** Solar PV system generates **4 kWh** of Electrical Energy per Day
4. Annual Solar Energy Generation Days: **300 Nos**

7. References:

- Audit Methodology: www.mahaurja.com
- Energy Conservation Building Code: ECBC-2017: www.beeindia.gov.in
- For CO_2 Emissions: www.tatapower.com
- For Solar PV Energy Generation: www.solarrooftop.gov.in

Pratibha College of Commerce & Computer Studies Chinchwad, Pune-19

ABBREVIATIONS

AC	:	Air conditioner
LED	:	Light Emitting Diode
kWh	:	kilo-Watt Hour
Qty	:	Quantity
W	:	Watt
kW	:	Kilo Watt
D/L	:	Down Lighter
PC	:	Personal Computer
MT	:	Metric Ton

CHAPTER-I
INTRODUCTION

1.1 Introduction:

An Energy Audit is conducted at Kamala Education Society's, Pratibha College of Commerce & Computer Studies, Pune.

The guidelines followed for conducting the Energy Audit are:

- BEE India's Energy Conservation Building Code: ECBC-2017
- Maharashtra Energy Development Agency (www.mahaurja.com)
- Tata Power: www.tatapower.com

1.2 Key Study Points:

No	Particulars
1	Study of Present Connected Load
2	Study of Present Energy Consumption
3	Study of Per Capita Energy Consumption
4	Study of Lighting
5	Study of Energy Efficiency & Renewable Energy

1.3 College Location Image:

Pratibha College of Commerce & Computer Studies ★ Chinchwad, Pune-19

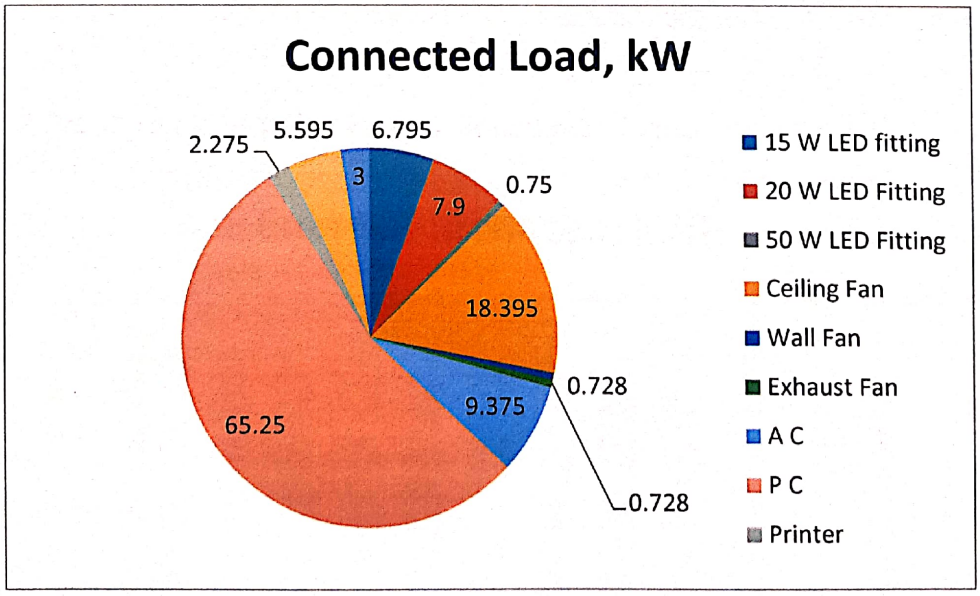
CHAPTER-II
STUDY OF CONNECTED LOAD

The major contributors to the connected load of the College include:

Table No 1: Study of Equipment wise Connected Load:

No	Equipment	Qty	Load, W/unit	Load, kW
1	15 W LED fitting	453	15	6.795
2	20 W LED Fitting	395	20	7.9
3	50 W LED Fitting	15	50	0.75
4	Ceiling Fan	283	65	18.395
5	Wall Fan	14	52	0.728
6	Exhaust Fan	14	52	0.728
7	A C	5	1875	9.375
8	P C	435	150	65.25
9	Printer	13	175	2.275
10	Lift	1	5595	5.595
11	Other Load	20	150	3
12	**Total**			**121**

Chart No 1: Study of Connected Load:



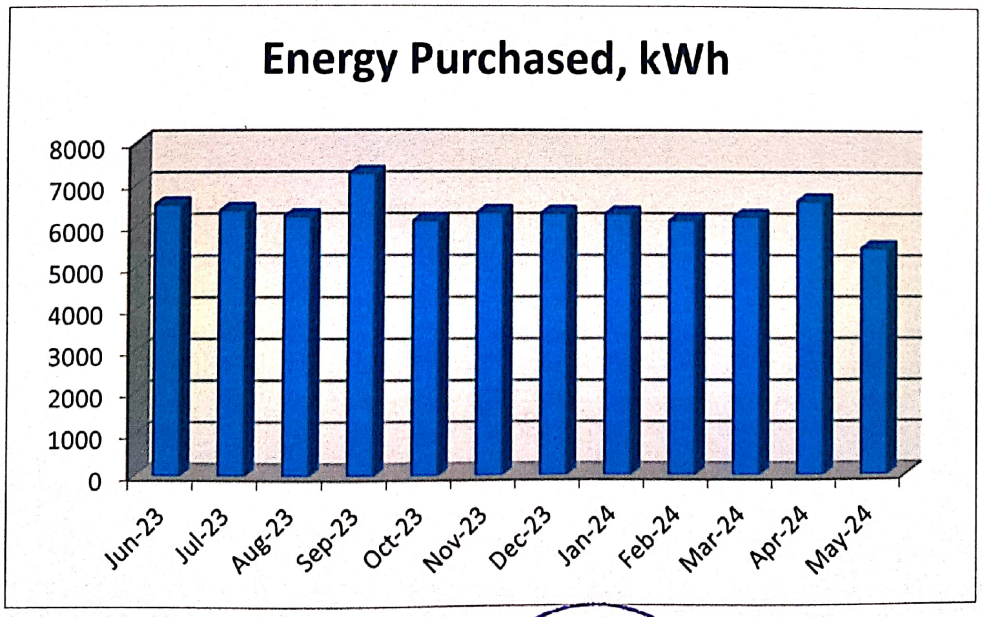
CHAPTER-III
STUDY OF PRESENT ENERGY CONSUMPTION

In this chapter, we present the analysis of Electrical Energy Consumption.

Table No 2: Electrical Energy Consumption Analysis- 2023-24:

No	Month	Energy Purchased, kWh	CO_2 Emissions, MT
1	Jun-23	6515	5.86
2	Jul-23	6364	5.73
3	Aug-23	6217	5.60
4	Sep-23	7247	6.52
5	Oct-23	6113	5.50
6	Nov-23	6311	5.68
7	Dec-23	6293	5.66
8	Jan-24	6279	5.65
9	Feb-24	6114	5.50
10	Mar-24	6206	5.59
11	Apr-24	6587	5.93
12	May-24	5455	4.91
13	Total	75701	68.13
14	Maximum	7247	6.52
15	Minimum	5455	4.91
16	Average	6308	5.68

Chart No 2: Variation in Monthly Energy Consumed, kWh:



College of Commerce & Computer Studies Chinchwad, Pune-19

CHAPTER-IV
STUDY OF PER CAPITA ENERGY CONSUMPTION

Per Capita Energy Consumption: Per Capita Energy Consumption Index of an educational Institute/College is its Annual Energy Consumption in Kilo Watt Hours per student studying in the Institute/College.

It is determined by:

$$\text{Per Capita Energy Consumption} = \frac{\text{(Annual Energy Consumption in kWh)}}{\text{(Total No of students studying)}}$$

Now we compute the EPI for the College as under:

Table No 3: Computation of Energy Consumption:

No	Particulars	**Value**	Unit
1	Total Annual Energy Consumed	75701	kWh
2	Energy Generated by Solar PV Plant	30000	kWh
3	Total Energy Consumed =1+2	105701	kWh
4	Total No Of students	**3280**	Nos
5	Per Capita Energy Consumption Index =(3) / (4)	**32.22**	kWh/m2

Pratibha College of Commerce & Computer Studies ★ Chinchwad, Pune-19

CHAPTER-V
STUDY OF LIGHTING

Terminology:

1. Lumen is a unit of light flow or luminous flux. The lumen rating of a lamp is a measure of the total light output of the lamp. The most common measurement of light output (or luminous flux) is the lumen. Light sources are labeled with an output rating in lumens.

2. Lux is the metric unit of measure for illuminance of a surface. One lux is equal to one lumen per square meter.

3. Circuit Watts is the total power drawn by lamps and ballasts in a lighting circuit under assessment.

4. Installed Load Efficacy is the average maintained illuminance provided on a horizontal working plane per circuit watt with general lighting of an interior. Unit: lux per watt per square metre (lux/W/m²)

5. Lamp Circuit Efficacy is the amount of light (lumens) emitted by a lamp for each watt of power consumed by the lamp circuit, i.e. including control gear losses. This is a more meaningful measure for those lamps that require control gear. Unit: lumens per circuit watt (lm/W)

6. Lighting Power Density: It is defined as Total Lighting Load in a room divided by the Area of that Room in square meters.

In this Chapter we compute the Lighting Power density and the percentage usage of LED Lighting to total Lighting Load of the College.

Table No 4: Computation of Lighting Power density at Room No:

No	Particulars	Value	Unit
1	No of 20 W FTL Fittings in Room	8	Nos
2	Load per Unit of 20 W Fitting	20	Watt
3	Total Load of 20 W FTL Fittings	**160**	W
4	Area of Room	57.6	m^2
5	Lighting Power Density = **(3) / (4)**	**2.78**	W/m^2

Now, we compute the usage of LED Lighting to Total Lighting Load, as under.

Table No 5: Percentage Usage of LEDs to Total Lighting Load:

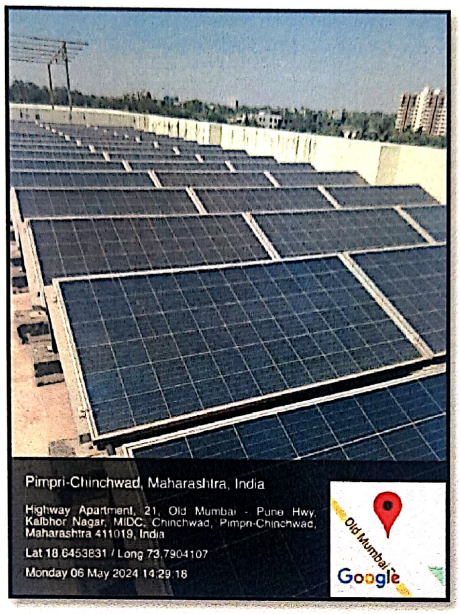
No	Particulars	Value	Unit
1	No of 15 W LED Fittings	453	Nos
2	Load/unit of 15 W LED Fitting	15	W
3	Total Load of 15 W Fittings	**6.795**	kW
4	No of 20 W LED Fittings	395	Nos
5	Load/unit of 20 W LED Fitting	20	W
6	Total Load of 20 W Fittings	**7.9**	kW
7	No of 50 W LED Fittings	15	Nos
8	Load/unit of 50 W LED Fitting	50	W
9	Total Load of 50 W Fittings	**0.75**	kW
10	Total LED Lighting Load=3+6+9	**15.45**	kW
11	Total Lighting Load=3+6+9	**15.45**	kW
12	% of LED to Total Lighting Load =**10*100/11**	**100**	%

CHAPTER-VI
STUDY OF RENEWABLE ENERGY & ENERGY EFFICIENCY

6.1 Usage of Renewable Energy:

The Institute has installed Roof Top Solar PV Plant of Capacity **25 kWp.**

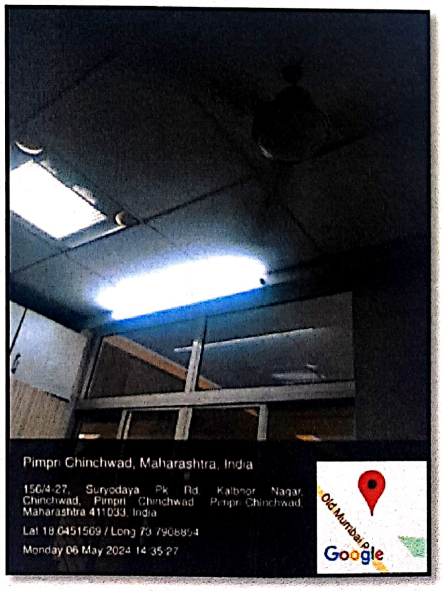
Photograph of Roof Top Solar PV Plant:



6.2 Energy Conservation Project Implemented:

1. Usage of Energy Efficient LED Light Fittings
2. Usage of BEE STAR Rated Equipment

Photograph of STAR Rated AC & LED Lighting:



GREEN AUDIT REPORT

Kamala Education Society's,

PRATIBHA COLLEGE OF COMMERCE & COMPUTER STUDIES,

Off Mumbai Pune Road, Chinchwad, Pune 411 019

KAMALA
Education Society

Year: 2023-24

Prepared by:

ENGRESS SERVICES

Yashashree, 26, Nirmal Bag Society
Near Muktangan English School, Parvati, Pune 411009
Phone: 09890444795 Email: engress123@gmail.com

ENGRESS SERVICES PUNE

Pratibha College of Commerce & Computer Studies Chinchwad, Pune-19

Registration Certificates: UDYAM, MEDA, ASSOCHAM GEM-CP, ISO: 9001 & 14001:

भारत सरकार
Government of India
सूक्ष्म, लघु एवं मध्यम उद्यम मंत्रालय
Ministry of Micro, Small and Medium Enterprises

UDYAM REGISTRATION CERTIFICATE

UDYAM REGISTRATION NUMBER	UDYAM-MH-26-0135636
NAME OF ENTERPRISE	ENGRESS SERVICES

TYPE OF ENTERPRISE *

S.No.	Classification Year	Enterprise Type	Classification Date
1	2023-24	Micro	03/02/2024
2	2022-23	Micro	26/06/2022
3	2021-22	Micro	27/07/2021

MAJOR ACTIVITY: SERVICES

SOCIAL CATEGORY OF ENTREPRENEUR: GENERAL

NAME OF UNIT(S)

S.No.	Name of Unit(s)
1	Engress Services

OFFICIAL ADDRESS OF ENTERPRISE

Flat Door/Block No.	26	Name of Premises/ Building	Yashshree
Village/Town	Pune	Block	1
Road/Street/Lane	Lokmanya Nagar,Nirmal Baug Soc	City	Pune
State	MAHARASHTRA	District	PUNE , Pin 411009
Mobile	8767447244	Email:	engress123@gmail.com

DATE OF INCORPORATION / REGISTRATION OF ENTERPRISE: 13/04/2021

DATE OF COMMENCEMENT OF PRODUCTION/BUSINESS: 13/04/2021

NATIONAL INDUSTRY CLASSIFICATION CODE(S)

SNo.	NIC 2 Digit	NIC 4 Digit	NIC 5 Digit	Activity
1	70 - Activities of head offices; management consultancy activities	7020 - Management consultancy activities	70209 - Management consultancy activities	Services

DATE OF UDYAM REGISTRATION: 27/07/2021

ASSOCHAM

GEM Certificate

ASSOCHAM hereby certifies that

Mr. A Y Mehendale

has successfully passed the
Green and Eco-friendly Movement Certified Professional Test (GEM CP)
with
"Excellent Performance"
on
06 June, 2022

He/she is now eligible to execute the GEM Sustainability Certification Projects
ASSOCHAM feels proud to award the GEM Certified Professional title to him/her

Pankaj R. Dharkar
Chairman, GEM

GEM CP 22/785

Deepak Sood
Secretary General, ASSOCHAM

Certificate of Registration

This is to Certify that
Quality Management System of

ENGRESS SERVICES

26, YASHASHREE, BLOCK 1, LOKMANYA NAGAR, NIRMAL BAUG SOC, PARVATI, PUNE- 411009, MAHARASHTRA, INDIA

has been assessed and found to conform to the requirements of
ISO 9001:2015
for the following scope :

CONSULTANCY SERVICES FOR ENERGY AUDIT, GREEN AUDIT & ENVIRONMENTAL AUDIT IN EDUCATIONAL INSTITUTIONS & SUBMISSION OF AUDIT CERTIFICATE AND REPORT

Certificate No	: 23EQSC13		
Initial Registration Date	: 27/03/2023	Issuance Date	: 27/03/2023
Date of Expiry	: 26/03/2026		
1st Surve. Due	: 27/02/2024	2nd Surve. Due	: 27/02/2025

Director

Magnitude Management Services Pvt. Ltd.

MAHARASHTRA ENERGY DEVELOPMENT AGENCY

Maharashtra Energy Development Agency
(Government of Maharashtra Institution)
Aundh Road, Opposite Spicer College Road, Near Commissionerate of Animal Husbandary,
Aundh, Pune, Maharashtra 411067
Ph No: 020-35000450
Email: eee@mahaurja.com, Web: www.mahaurja.com

ECN/2022-23/CR-43/1709 — 10th May, 2022

CERTIFICATE OF REGISTRATION
FOR CLASS 'A'

We hereby certify that, the firm having following particulars is registered with ***MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA)*** under given category as "Energy Planner & Energy Auditor" in Maharashtra for Energy Conservation Programme of MEDA.

Name and Address of the firm : M/s Engress Services
Yashshree, 26, Nirmal Bag Society,
Near Muktangan English School,
Parvati, Pune – 411 009.

Registration Category : *Empanelled Consultant for Energy Conservation Programme for Class 'A'*

Registration Number : *MEDA/ECN/2022-23/Class A/EA-32.*

- Energy Conservation Programme intends to identify areas where wasteful use of energy occurs and to evaluate the scope for Energy Conservation and take concrete steps to achieve the evaluated energy savings
- MEDA reserves the right to visit at any time without giving prior information to verify quarterly activities performed by the firm and canceling the registration, if the information is found incorrect.
- This empanelment is valid till 09th May, 2024 from the date of registration, to carry out energy audits under the Energy Conservation Programme
- The Director General, MEDA reserves the right to cancel the registration at any time without assigning any reasons thereof.

General Manager (EC)

Certificate of Registration

This is to Certify that
Environmental Management System of

ENGRESS SERVICES

26, YASHASHREE, BLOCK 1, LOKMANYA NAGAR, NIRMAL BAUG SOC, PARVATI, PUNE- 411009, MAHARASHTRA, INDIA

has been assessed and found to conform to the requirements of
ISO 14001:2015
for the following scope :

CONSULTANCY SERVICES FOR ENERGY AUDIT, GREEN AUDIT & ENVIRONMENTAL AUDIT IN EDUCATIONAL INSTITUTIONS & SUBMISSION OF AUDIT CERTIFICATE AND REPORT

Certificate No	: 23EERW20		
Initial Registration Date	: 28/03/2023	Issuance Date	: 28/03/2023
Date of Expiry	: 26/03/2026		
1st Surve. Due	: 28/02/2024	2nd Surve. Due	: 28/02/2025

Director

Magnitude Management Services Pvt. Ltd.

Pratibha College of Commerce & Computer Studies ★ Chinchwad, Pune-19

INDEX

Pratibha College of Commerce & Computer Studies
Chinchwad, Pune-19

ACKNOWLEDGEMENT

We at Engress Services, Pune, express our sincere gratitude to the management of Kamala Education Society's, Pratibha College of Commerce & Computer Studies, Pune for awarding us the assignment of Green Audit of their campus for the Year: 2023-24.

We are thankful to all staff members for helping us during the field study.

EXECUTIVE SUMMARY

1. Kamala Education Society's, Pratibha College of Commerce & Computer Studies, Pune consumes Energy in the form of **Electrical Energy;** used for various gadgets, Office & other facilities.

2. Present Energy Consumption & CO_2 Emission:

No	Particulars	Value	Unit
1	Energy Purchased	**75701**	kWh
2	Annual CO_2 Emissions	**68.13**	MT

3. Usage of Renewable Energy:

- The College has installed Roof Top Solar PV Plant of Capacity **25 kWp.**
- Energy Generated by Solar PV Plant in 2023-24 is **30000 kWh**
- Annual Reduction in CO_2 Emissions in 2023-24 is **27 MT.**

4. Waste Management:

No	Head	Particulars
1	Solid Waste	Segregation of Waste at source
2	Organic Waste	Provision of Bio Composting Unit
3	Sanitary waste	Provision of Sanitary Waste Incinerator
4	E Waste	Disposed of through Authorized Agency

5. Rain Water Management:

The Institute has installed Rain Water Management Project; The Rain Water falling on the terrace and slopes is channelized through a pipe and used to recharge the bore well.

6. Green & Sustainable Practices:

- Maintenance of good Internal Road
- Tree Plantation in the campus.
- Provision of Ramp & Lift for Divyangajan
- Creation of awareness on Energy Conservation Display of Posters

7. Assumption:

1. Energy Consumption in computed on the basis of Load Utilization Factor
2. **1 kWh** of Electrical Energy releases **0.9 Kg of CO_2** into atmosphere
3. **1 kWp** Solar PV system generates **4 kWh** of Electrical Energy per Day
4. Annual Solar Energy Generation Days: **300 Nos**

8. References:

1. For CO_2 Emissions: www.tatapower.com
2. For Solar PV Energy Generation: www.solarrofftop.gov.in

Pratibha College of Commerce & Computer Studies Chinchwad, Pune-19

ABBREVIATIONS

LED	:	Light Emitting Diode
kWh	:	kilo-Watt Hour
Qty	:	Quantity
W	:	Watt
kW	:	Kilo Watt
MT	:	Metric Ton

CHAPTER-I
INTRODUCTION

1.1 Introduction:

A Green Audit is conducted at Kamala Education Society's, Pratibha College of Commerce & Computer Studies, Chinchwad, Pune.

1.2 Key Study Points:

No	Particulars
1	Study of Present Energy Consumption & CO_2 Emission
2	Study of Usage of Renewable Energy
3	Study of Waste Management Practices
4	Study of Rain Water Management
5	Study of Green & Sustainable Initiatives

1.3 College Location Image:

Pratibha College of Commerce & Computer Studies ★ Chinchwad, Pune-19

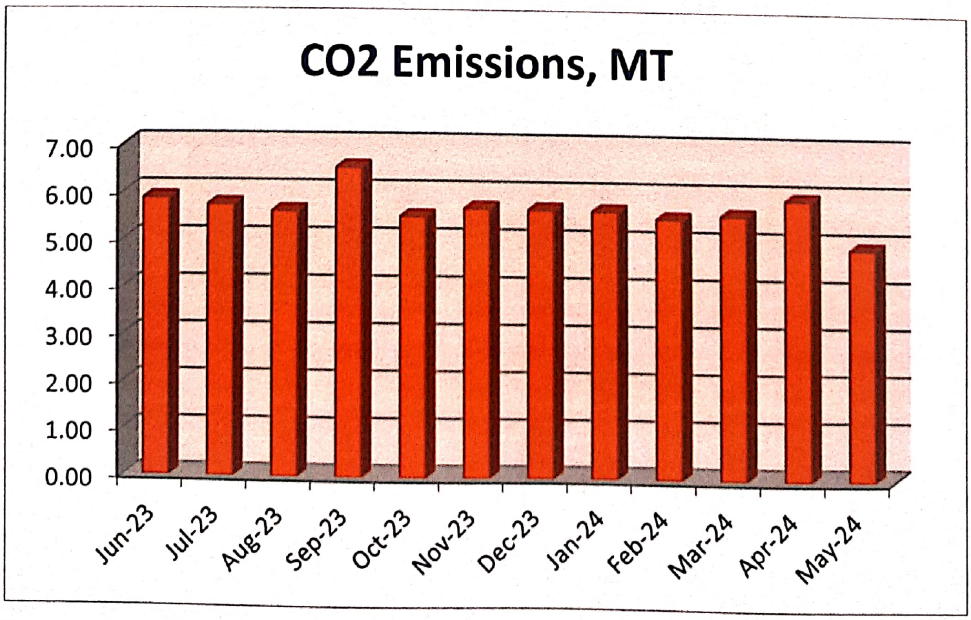
CHAPTER-II
STUDY OF ENERGY CONSUMPTION & CO_2 EMISSION

A Carbon Foot print is defined as the Total Greenhouse Gas emissions, emitted due to various activities. **Basis for computation of CO_2 Emissions: 1 kWh** of Electrical Energy releases **0.9 Kg of CO_2** into atmosphere.

Table No 1: Month wise Energy Consumption & CO_2 Emissions:

No	Month	Energy Purchased, kWh	CO_2 Emissions, MT
1	Jun-23	6515	5.86
2	Jul-23	6364	5.73
3	Aug-23	6217	5.60
4	Sep-23	7247	6.52
5	Oct-23	6113	5.50
6	Nov-23	6311	5.68
7	Dec-23	6293	5.66
8	Jan-24	6279	5.65
9	Feb-24	6114	5.50
10	Mar-24	6206	5.59
11	Apr-24	6587	5.93
12	May-24	5455	4.91
13	Total	75701	68.13
14	Maximum	7247	6.52
15	Minimum	5455	4.91
16	Average	6308	5.68

Chart No 1: Month wise CO_2 Emissions:



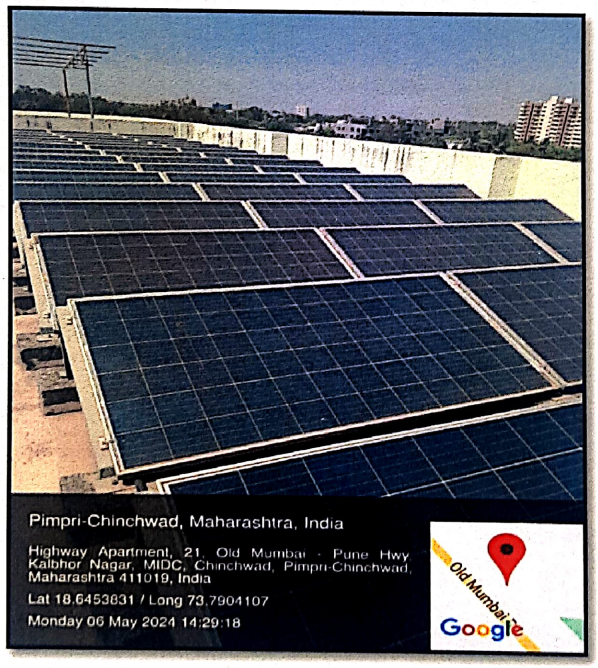
CHAPTER III
STUDY OF USAGE OF RENEWABLE ENERGY

The College has installed **25 kWp** Roof Top Solar PV Plant. In the following Table, we present the Annual Reduction in CO_2 Emissions due to usage of Renewable Energy.

Table No 3: Calculation of Reduction in CO_2 Emissions:

No	Particulars	Value	Unit
1	Installed Roof Top Solar PV Plant Capacity	25	kWp
2	Average Daily Energy Generated	4	kWh/kWp
3	Annual Generation Days	300	Nos
4	Annual Solar Energy Generated	**30000**	kWh
5	1 kWh of Energy is equivalent to	**0.9**	Kg of CO_2
6	Reduction in Annual CO_2 Emissions= **(4) * (5)/1000**	**27**	**MT**

Photograph of Roof Top Solar PV Plant:

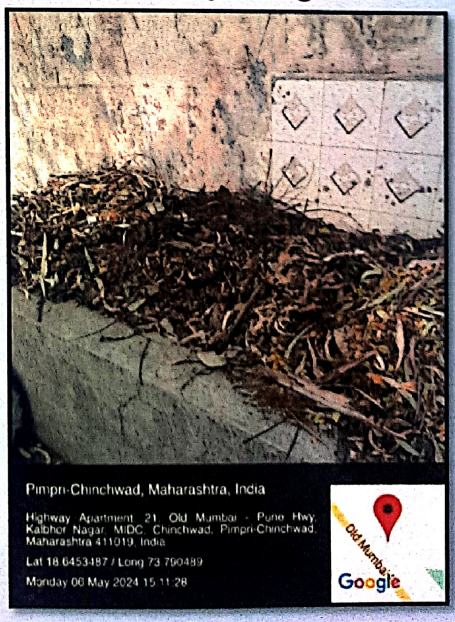


Pratibha College of Commerce & Computer Studies ★ Chinchwad, Pune-19

CHAPTER IV
STUDY OF WASTE MANAGEMENT

In this Chapter, we present the Waste Management Practices, followed by the College.

Details of Waste Management Practices:

No	Head	Observation	Photograph
1	**Solid Waste**	Segregation of Waste at Source: Provision of Waste Collection Bins	**Waste Collection Bin:** 
2	**Organic Waste**	Provision of Bio Composting Bed: For conversion into Bio Compost	**Bio Composting Bed:** 

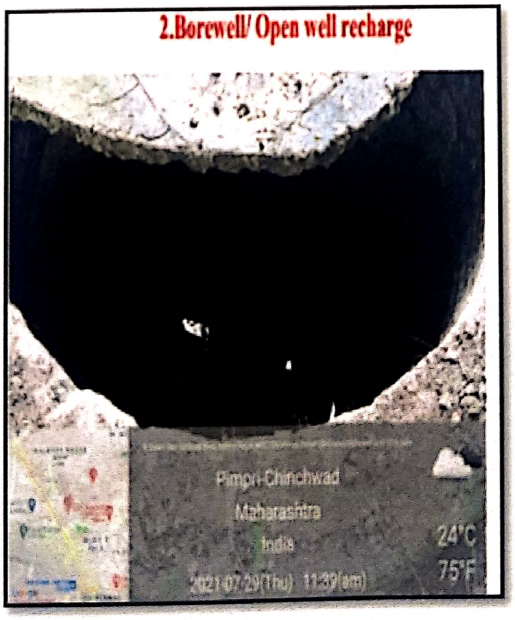
3	**Sanitary Waste**	Provision of Sanitary Waste Incinerator for Disposal of Sanitary Waste	**Sanitary Waste Incinerator:** 
4	**E Waste**	E Waste is disposed of through Authorized Agency	

Pratibha College of Commerce & Computer Studies Chinchwad, Pune-19

CHAPTER-V
STUDY OF RAIN WATER MANAGEMENT

The Institute has installed Rain Water Management Project; The Rain Water falling on the terrace and slopes is channelized through a pipe and used to recharge the bore well.

Photograph of Rain Water Collecting Pipe & Bore well Recharge Point:

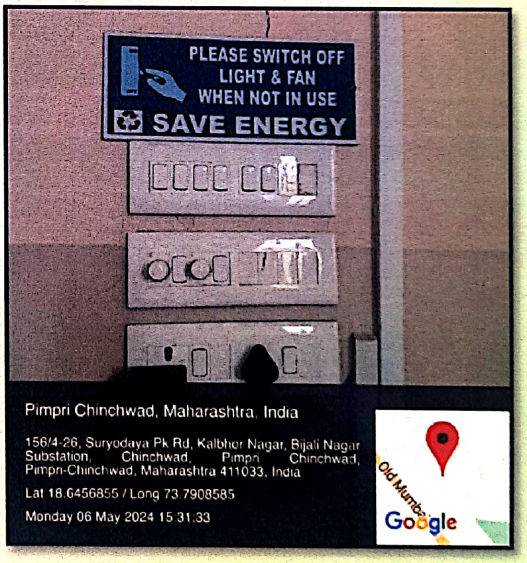


CHAPTER-VI
STUDY OF GREEN & SUSTAINABLE PRACTICES

In this Chapter, we present the Green & Sustainable Practices followed by the College.

Green & Sustainable Practices:

No	Head	Observation	Photograph
1	**Easy Movement of Stake Holders**	Provision of Good Internal Road within the Campus	**Internal Road:** 
2	**Tree Plantation**	Internal Tree Plantation in the Campus	**Internal Tree Plantation:** 

3	**Facilities for Divyangajan**	Provision of Ramp & Lift for Divyangajan	**Ramp for Divyangajan:** 
4	**Creation of Awareness among Stake Holders**	Display of Poster on Energy Conservation	**Poster on Energy Conservation:** 

Pratibha College of Commerce & Computer Studies ★ Chinchwad, Pune-19

ANNEXURE-1:
LIST OF TREES& PLANTS IN THE CAMPUS:

No	Name of Tree/Plant			Indoor Plants
1	Cycus		No	Name of Tree/Plant
2	Adulsa		1	Peace Lily
3	Bottle Brush		2	Aloevera
4	Green Champa		3	Drecena
5	Ashwagandha		4	Fern
6	Dikemali		5	Chinese Evergreen
7	Bel		6	Flemingo
8	Tulsi		7	Arica Palm
9	Shevga		8	Money Plant
10	Seeta Ashok		9	Heart Leaf
11	Tuti		10	Azalia
12	Apta		11	Green Spider
13	Bibba		12	Weeping Fig
14	Tamhan		13	Croton
15	Sonchampa		14	Fig Plant
16	Kanher		15	Dumb cane
17	Amla		16	Snake plant
18	Behda			
19	Arjun			
20	Mahogany			
21	Ritha			
22	Rose			
23	Shikekai			
24	Mehendi			
25	Bramhi			
26	Gulvel			
27	Jasmine			
28	Jai			
29	Shatavari			
30	Gingko			
31	Tirphal			
32	Nagkeshar			
33	Bhringaraj			
34	Putrajeevi			
35	Madhumalti			

Pratibha College of Commerce & Computer Studies Chinchwad, Pune-19

ENVIRONMENTAL AUDIT REPORT

Kamala Education Society's,

PRATIBHA COLLEGE OF COMMERCE & COMPUTER STUDIES,

Off Mumbai Pune Road, Chinchwad, Pune 411 019

KAMALA
Education Society

Year: 2023-24

Prepared by:

ENGRESS SERVICES

Yashashree, 26, Nirmal Bag Society
Near Muktangan English School, Parvati, Pune 411009
Phone: 09890444795 Email: engress123@gmail.com

ENGRESS SERVICES PUNE

Pratibha College of Commerce & Computer Studies Chinchwad, Pune-19

Registration Certificates: UDYAM, MEDA, ASSOCHAM GEM-CP, ISO: 9001 & 14001:

भारत सरकार
Government of India
सूक्ष्म, लघु एवं मध्यम उद्यम मंत्रालय
Ministry of Micro, Small and Medium Enterprises

UDYAM REGISTRATION CERTIFICATE

UDYAM REGISTRATION NUMBER	UDYAM-MH-26-0135636
NAME OF ENTERPRISE	ENGRESS SERVICES

TYPE OF ENTERPRISE *

S.No.	Classification Year	Enterprise Type	Classification Date
1	2023-24	Micro	03/02/2024
2	2022-23	Micro	26/06/2022
3	2021-22	Micro	27/07/2021

MAJOR ACTIVITY	SERVICES
SOCIAL CATEGORY OF ENTREPRENEUR	GENERAL

NAME OF UNIT(S)

S.No.	Name of Unit(s)
1	Engress Services

OFFICAL ADDRESS OF ENTERPRISE

Flat/Door/Block No.	26	Name of Premises/ Building	Yashashree
Village/Town	Pune	Block	1
Road/Street/Lane	Lokmanya Nagar,Nirmal Baug Soc	City	Pune
State	MAHARASHTRA	District	PUNE , Pin 411009
Mobile	8767447244	Email:	engress123@gmail.com

DATE OF INCORPORATION / REGISTRATION OF ENTERPRISE	13/04/2021
DATE OF COMMENCEMENT OF PRODUCTION/BUSINESS	13/04/2021

NATIONAL INDUSTRY CLASSIFICATION CODE(S)

S.No.	NIC 2 Digit	NIC 4 Digit	NIC 5 Digit	Activity
1	70 - Activities of head offices; management consultancy activities	7020 - Management consultancy activities	70200 - Management consultancy activities	Services

DATE OF UDYAM REGISTRATION 27/07/2021

ASSOCHAM

GEM Certificate

ASSOCHAM hereby certifies that

Mr. A Y Mehendale

has successfully passed the
Green and Eco-friendly Movement Certified Professional Test (GEM CP)
with
"Excellent Performance"
on
06 June, 2022

He/she is now eligible to execute the GEM Sustainability Certification Projects.
ASSOCHAM feels proud to award the GEM Certified Professional title to him/her.

Pankaj R. Dharkar
Chairman, GEM

GEM CP 22/788

Deepak Sood
Secretary General, ASSOCHAM

Certificate of Registration

This is to Certify that
Quality Management System of

ENGRESS SERVICES

26, YASHASHREE, BLOCK 1, LOKMANYA NAGAR, NIRMAL BAUG SOC, PARVATI, PUNE- 411009, MAHARASHTRA, INDIA

has been assessed and found to conform to the requirements of
ISO 9001:2015
for the following scope :

CONSULTANCY SERVICES FOR ENERGY AUDIT, GREEN AUDIT & ENVIRONMENTAL AUDIT IN EDUCATIONAL INSTITUTIONS & SUBMISSION OF AUDIT CERTIFICATE AND REPORT.

Certificate No : 23EQKC13
Initial Registration Date : 27/03/2023 Issuance Date : 27/03/2023
Date of Expiry : 26/03/2026
1st Surve. Due : 27/02/2024 2nd Surve. Due : 27/02/2025

cms EGAC Accredited IAF

Director

Magnitude Management Services Pvt. Ltd.

MAHARASHTRA ENERGY DEVELOPMENT AGENCY

Maharashtra Energy Development Agency
(Government of Maharashtra Institution)
Aundh Road, Opposite Spicer College Road, Near Commissionerate of Animal Husbandary, Aundh, Pune, Maharashtra 411067
Ph No: 020-35000450
Email: ees@mahaurja.com, Web: www.mahaurja.com

ECN/2022-23/CR-43/1709 10th May, 2022

CERTIFICATE OF REGISTRATION
FOR CLASS 'A'

We hereby certify that, the firm having following particulars is registered with *MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA)* under given category as "Energy Planner & Energy Auditor" in Maharashtra for Energy Conservation Programme of MEDA.

Name and Address of the firm : M/s Engress Services
Yashshree, 26, Nirmal Bag Society,
Near Muktangan English School,
Parvati, Pune – 411 009.

Registration Category : *Empanelled Consultant for Energy Conservation Programme for Class 'A'*

Registration Number : *MEDA/ECN/2022-23/Class A/EA-32.*

- Energy Conservation Programme intends to identify areas where wasteful use of energy occurs and to evaluate the scope for Energy Conservation and take concrete steps to achieve the evaluated energy savings.
- MEDA reserves the right to visit at any time without giving prior information to verify quarterly activities performed by the firm and canceling the registration, if the information is found incorrect.
- This empanelment is valid till **09th May, 2024** from the date of registration, to carry out energy audits under the Energy Conservation Programme.
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General Manager (EC)

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Certificate No : 23EEKW20
Initial Registration Date : 29/03/2023 Issuance Date : 29/03/2023
Date of Expiry : 28/03/2026
1st Surve. Due : 29/02/2024 2nd Surve. Due : 28/02/2025

cms EGAC Accredited IAF

Director

Magnitude Management Services Pvt. Ltd.

College of Commerce & Computer Studies ★ Pratibha Chinchwad, Pune-19

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Pratibha College of Commerce & Computer Studies ★ Chinchwad, Pune-19

ACKNOWLEDGEMENT

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We are thankful to all staff members for helping us during the field study.

EXECUTIVE SUMMARY

1. Kamala Education Society's, Pratibha College of Commerce & Computer Studies, Pune consumes Energy in the form of **Electrical Energy;** used for various gadgets, Office & other facilities.

2. Pollution due to College Activities:

- **Air pollution:** Mainly CO_2 on account of Electricity Consumption
- **Solid Waste:** Bio degradable Garden Waste, Paper & Plastic Waste
- **Liquid Waste:** Human liquid waste

3. Present Energy Consumption & CO_2 Emission:

No	Particulars	Value	Unit
1	Energy Purchased	**75701**	kWh
2	Annual CO_2 Emissions	**68.13**	MT

4. Usage of Renewable Energy:

- Usage of Energy Efficient BEE STAR Rated Equipment
- Installation of 25 kWp Roof Top Solar PV Plant
- Implementation of Rain Water Management Plant

5. Indoor Air Quality Parameters:

No	Parameter/Value	AQI	PM-2.5	PM-10
1	Maximum	**63**	**39**	**51**
2	Minimum	**56**	**34**	**44**

6. Indoor Lux & Noise Level Parameters:

No	Parameter/Value	Lux Level	Noise Level, dB
1	Maximum	**236**	**46.3**
2	Minimum	**209**	**43**

7. Waste Management:

No	Head	Particulars
1	Solid Waste	Segregation of Waste at source
2	Organic Waste	Provision of Bio Composting Unit
3	Sanitary waste	Provision of Sanitary Waste Incinerator
4	E Waste	Disposed of through Authorized Agency

Pratibha College of Commerce & Computer Studies Chinchwad, Pune-19

8. Rain Water Management:

The Institute has installed Rain Water Management Project; The Rain Water falling on the terrace and slopes is channelized through a pipe and used to recharge the bore well.

9. Environment Friendly Initiatives:

- Tree Plantation in the campus.
- Creation of awareness on Energy Conservation Display of Posters

10. Assumption:

1. Energy Consumption is computed on the basis of Load Utilization Factor
2. **1 kWh** of Electrical Energy releases **0.9 Kg of CO_2** into atmosphere
3. **1 kWp** Solar PV system generates **4 kWh** of Electrical Energy per Day
4. Annual Solar Energy Generation Days: **300 Nos**

11. References:

- For CO_2 Emission computation: www.tatapower.com
- For Solar PV Energy Generation: www.solarrooftop.gov.in
- For Various Indoor Air Parameters: www.ishrae.com
- For AQI Quality Standards: www.cpcb.com

Pratibha College of Commerce & Computer Studies
Chinchwad, Pune-19

ABBREVIATIONS

kWh	:	kilo-Watt Hour
Qty	:	Quantity
MT	:	Metric Ton
CO_2	:	Carbon Di Oxide
kWp	:	Kilo Watt Peak
AQI	:	Air Quality Index
PM2.5	:	Particulate Matter of Size 2.5 microns
PM 10	:	Particulate Matter of Size 10 microns
CPCB	:	Central Pollution Control Board
ISHARE	:	The Indian Society of Heating & Refrigerating & Air Conditioning Engineers

Pratibha College of Commerce & Computer Studies
Chinchwad, Pune-19

CHAPTER-I
INTRODUCTION

1. Important Definitions:

1.1. Environment: Definition as per environment Protection Act: 1986

Environment includes water, air and land and the inter-relationship which exists among and between Water, Air, Land and Human beings, other living creatures, plants microorganism and property

1.2. Environmental Audit: Definition:

According to UNEP, 1990, "Environmental audit can be defined as a management tool comprising systematic, documented and periodic evaluation of how well environmental organization management and equipment are performing with an aim of helping to regularize the environment

1.2 Key Study Points:

No	Particulars
1	Study of Present Resource Consumption & CO_2 Emission
2	Study of Usage of Renewable Energy
3	Study of Indoor Air Quality
4	Study of Indoor Lux & Noise Level
5	Study of Water Management
6	Study of Waste Management Practices
7	Study of Environment Friendly Practices

1.3 College Location Image:

Pratibha College of Commerce & Computer Studies ★ Chinchwad, Pune-19

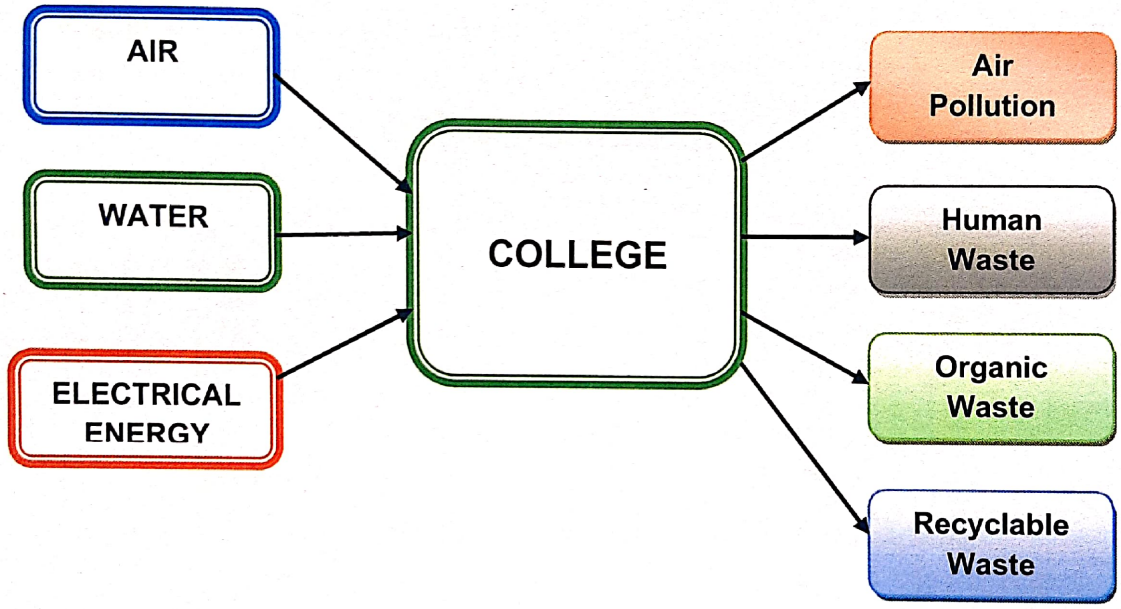
CHAPTER-II
STUDY OF RESOURCE CONSUMPTION & CO_2 EMISSION

The College consumes following basic/derived Resources:

1. Air
2. Water
3. Electrical Energy

We try to draw a schematic diagram for the College System & Environment as under.

Chart No 1: Representation of Resource Requirement & Waste of a College:



Now we compute the Generation of CO_2 on account of consumption of Electrical Energy. The basis of Calculation for CO_2 emissions due to Electrical Energy is as under.

- **1 kWh** of Electrical Energy releases **0.9 Kg of CO_2** into atmosphere

Table No 1: Study of Purchase of Energy & CO_2 Emissions: 23-24:

No	Month	Energy Purchased, kWh	CO_2 Emissions, MT
1	Jun-23	6515	5.86
2	Jul-23	6364	5.73
3	Aug-23	6217	5.60
4	Sep-23	7247	6.52
5	Oct-23	6113	5.50
6	Nov-23	6311	5.68
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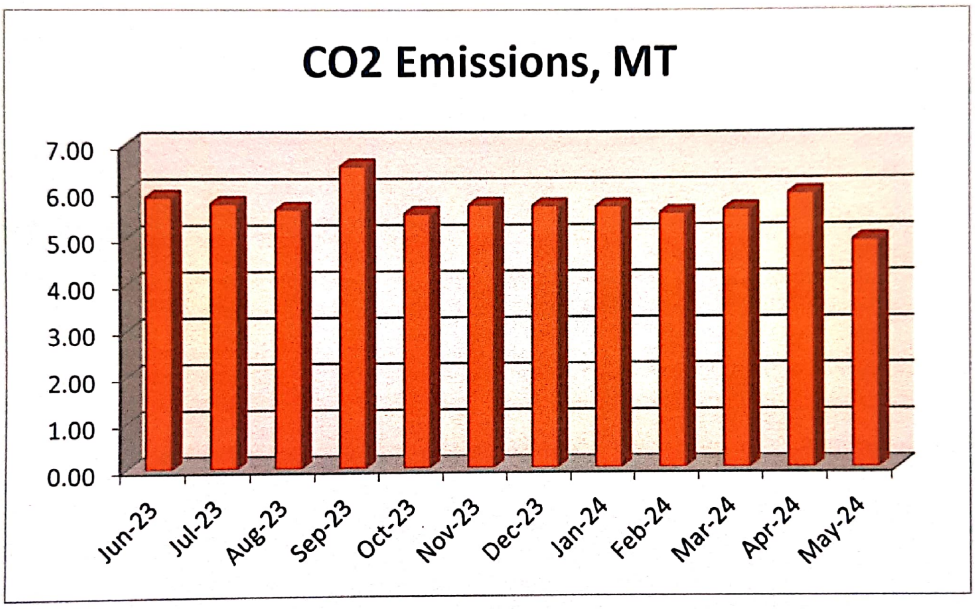
12	May-24	5455	4.91
13	Total	75701	68.13
14	Maximum	7247	6.52
15	Minimum	5455	4.91
16	Average	6308	5.68

Chart No 2: Month wise CO_2 Emissions:



CHAPTER III
STUDY OF USAGE OF RENEWABLE ENERGY

The College has installed **25 kWp** Roof Top Solar PV Plant. In the following Table, we present the Annual Reduction in CO_2 Emissions due to usage of Renewable Energy.

Table No 3: Calculation of Reduction in CO_2 Emissions:

No	Particulars	Value	Unit
1	Installed Roof Top Solar PV Plant Capacity	25	kWp
2	Average Daily Energy Generated	4	kWh/kWp
3	Annual Generation Days	300	Nos
4	Annual Solar Energy Generated	**30000**	kWh
5	1 kWh of Energy is equivalent to	**0.9**	Kg of CO_2
6	Reduction in Annual CO_2 Emissions= **(4) * (5)/1000**	**27**	**MT**

Photograph of Roof Top Solar PV Plant:

Pratibha College of Commerce & Computer Studies
Chinchwad, Pune-19

CHAPTER IV
STUDY OF INDOOR AIR QUALITY

1. Air: The common name given to the atmospheric gases used in breathing and photosynthesis.

2. Air quality is a measure of the suitability of air for breathing by people, plants and animals.

3. Air Quality Index: Air Quality Index (AQI) is a number used by government agencies to measure the **Air Pollution** levels and communicate it to the population.

In this Chapter, we present three important Parameters: **AQI**- Air Quality Index, **PM-2.5**- Particulate Matter of Size 2.5 micron and **PM-10**- Particulate Matter of Size 10 micron

Table No 3: Indoor Air Quality Parameters:

No	Location	AQI	PM2.5	PM10
1	Classroom	60	36	48
2	Physics Lab	61	37	49
3	SYBBA	56	34	44
4	Principal cabin	58	35	45
5	Computer Lab	63	39	51
	Maximum	**63**	**39**	**51**
	Minimum	**56**	**34**	**44**

Table No 4: Air Quality Index Values & Concentration of PM 2.5 & PM10: (By CPCB):

No	Category	AQI Value	Concentration Range, PM 2.5	Concentration Range, PM 10
1	Good	0 to 50	0 to 30	0 to 50
2	Satisfactory	51 to 100	31 to 60	51 to 100
3	Moderately Polluted	101 to 200	61 to 90	101 to 250
4	Poor	201 to 300	91 to 120	251 to 350
5	Very Poor	301 to 400	121 to 250	351 to 430
6	Severe	401 to 500	250 +	430 +

Conclusion:

From the above measured values, we conclude that the observed values of AQI, PM-2.5 & PM-10 are in the **Satisfactory Range**, as per the guidelines given by Central Pollution Control Board.

Pratibha College of Commerce & Computer Studies Chinchwad, Pune-19

CHAPTER V
STUDY OF INDOOR LUX & NOISE PARAMETERS

In this Chapter, we present the various Indoor Comfort Parameters measured during the Audit. The Parameters include: **Lux Level and Noise Level.**

Table No 4: Study of Indoor Comfort Condition Parameters:

No	Location	Lux Level, Lumen	Noise Level, dB
1	Classroom	219	45.9
2	Physics Lab	236	44.8
3	SYBBA	217	46.3
4	Principal cabin	223	45
5	Computer Lab	209	43
	Maximum	**236**	**46.3**
	Minimum	**209**	**43**

Recommended Lux & Noise Level: As per BEE & ISHRAE Guidelines:

A) Noise Level Reference:		
No	**Location**	**Noise Level Range, dB**
1	Offices	45-50
2	Occupied Class Room	40-45
3	Libraries	35-40
B) Reference Lux Level, Lumens:		
1	For Class Rooms	**200 Plus**
2	For Reading Rooms	**200 Plus**

Conclusion:

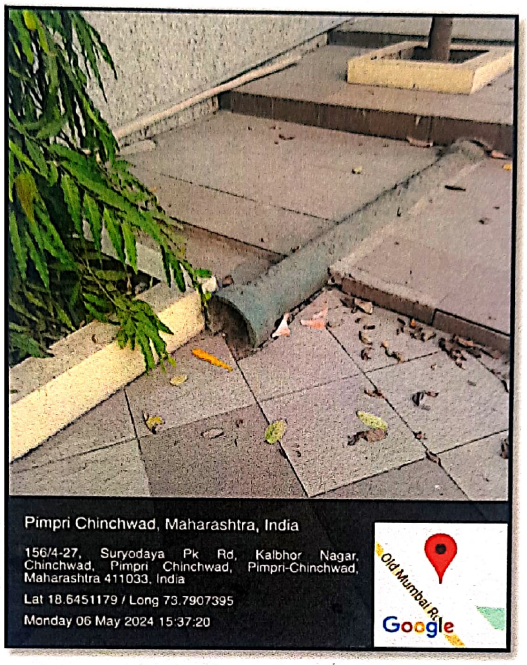
From the above measured values, we conclude that:

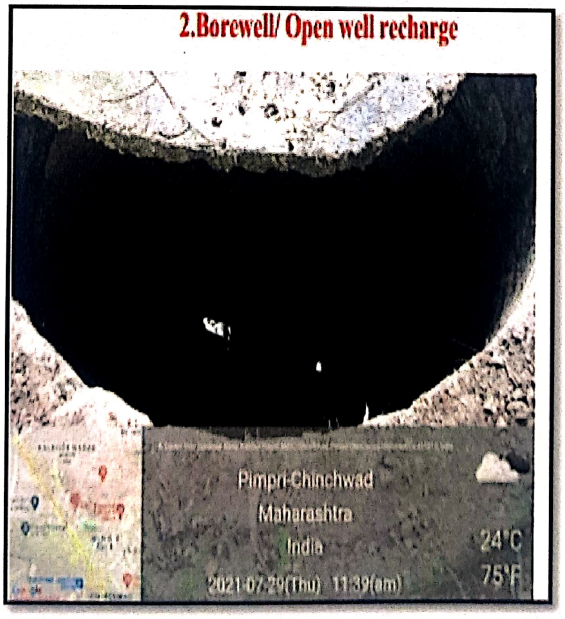
- The Noise Level is within the prescribed Limit
- The Lux Level at various locations is Okay

CHAPTER VI
STUDY OF RAIN WATER MANAGEMENT

The Institute has installed Rain Water Management Project; The Rain Water falling on the terrace and slopes is channelized through a pipe and used to recharge the bore well.

Photograph of Rain Water Collecting Pipe & Bore well Recharge Point:





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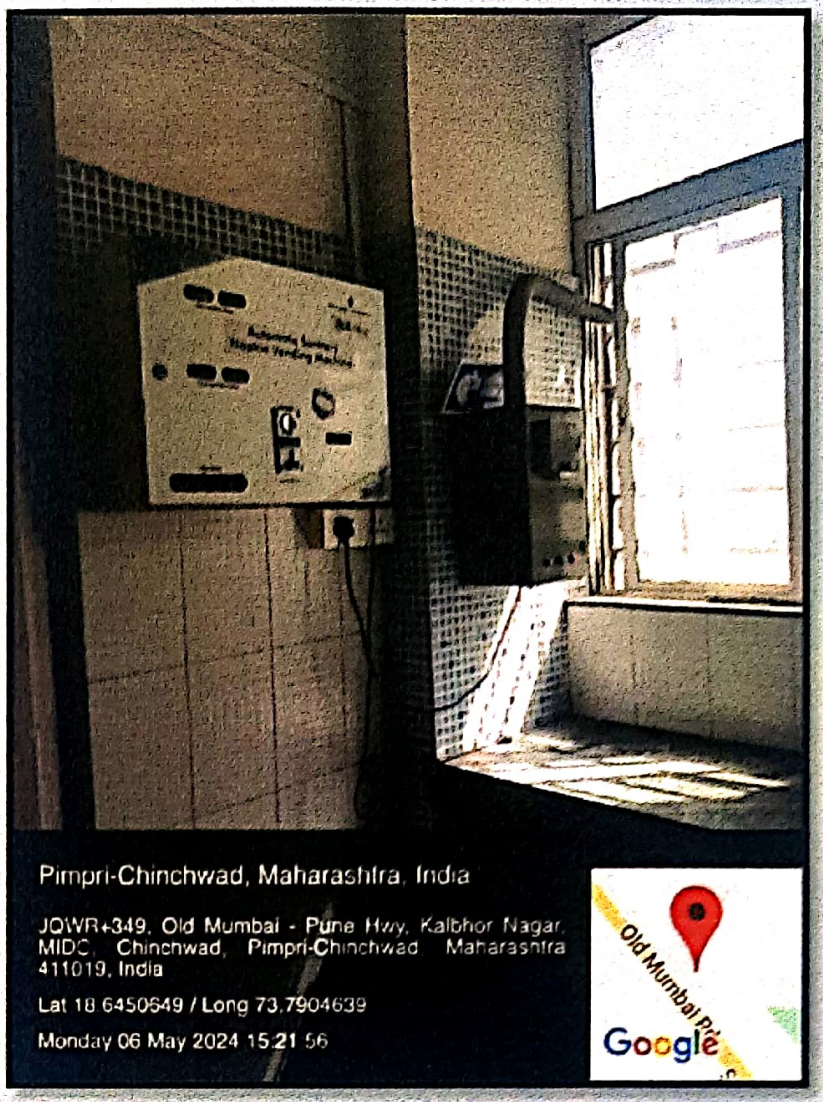
CHAPTER-VII
STUDY OF WASTE MANAGEMENT

In this Chapter, we present the Waste Management Practices, followed by the College.

Details of Waste Management Practices:

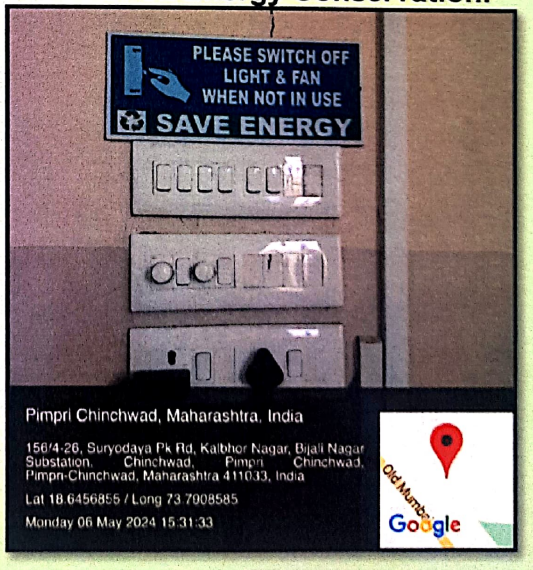
No	Head	Observation	Photograph
1	**Solid Waste**	Segregation of Waste at Source: Provision of Waste Collection Bins	**Waste Collection Bin:** 
2	**Organic Waste**	Provision of Bio Composting Bed: For conversion into Bio Compost	**Bio Composting Bed:** 

3	**Sanitary Waste**	Provision of Sanitary Waste Incinerator for Disposal of Sanitary Waste	**Sanitary Waste Incinerator:** 
4	**E Waste**	E Waste disposed of through Authorized Agency	

CHAPTER-VIII
STUDY OF ENVIRONMENT FRIENDLY PRACTICES

In this Chapter, we present the Eco Friendly Practices, followed by the College.

Details of Eco Friendly Practices:

No	Head	Observation	Photograph
1	**Tree Plantation**	Tree Plantation in the Campus	**Internal Tree Plantation:** 
2	**Creation of Awareness among Stake Holders**	Display of Poster on Energy Conservation	**Poster on Energy Conservation:** 

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