



Hon. Mr. R. V. Pharate
Founder President

Shri Wagheshwar Gramvikas Pratishthan's
**LOKNETE SHRI DADAPATIL PHARATE COLLEGE OF
PHARMACY**

A/p-Mandavgan Pharata, Tal-Shirur, Dist-Pune, 412211.

Hon. Mrs. M. R. Pharate
Founder Secretary



Dr. H. V. Kamble
Principal

7.1.3: Quality audits on environment and energy regularly undertaken by the Institution. The institutional environment and energy initiatives are confirmed through the following

- 1. Green audit**
- 2. Environment audit Energy audit**
- 3. Energy audit**
- 4. Clean and green campus initiatives**
- 5. Beyond the campus environmental promotion activities**



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4	Certificate



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GREEN AUDIT REPORT
of

**Shri Wagheshwar Gramvikas Pratishthan's,
LOKNETE SHRI DADA PATIL PHARATE
COLLEGE OF PHARMACY,
Mandavgan Pharata, Taluka: Shirur, District: Pune**



Year: 2022-23

Prepared by

ENGRESS SERVICES

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

REGISTRATION CERTIFICATES



Hon. Mr. R. V. Pharate
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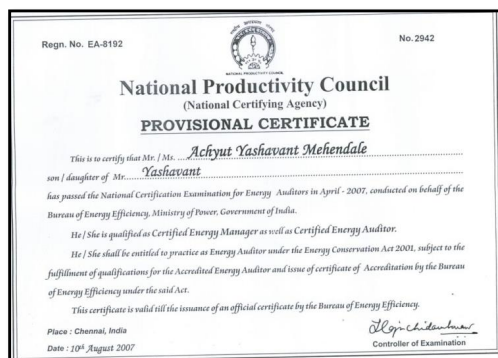
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BEE AUDITOR CERTIFICATE



MEDA EMPANELMENT CERTIFICATE



ASSOCHAM GEM CP CERTIFICATE



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ACKNOWLEDGEMENT

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EXECUTIVE SUMMARY

1. Shri Wagheshwar Gramvikas Pratishthan's Loknete Shri Dada Patil Pharate College Of Pharmacy, Mandavgan Pharate, Taluka: Shirur, District: Pune consumes Energy in the form of **Electrical Energy**; used for various gadgets, Office & other facilities.

2. Energy Consumed and CO₂ Emission:

No	Parameter	Energy Consumed, kWh	CO ₂ emissions, MT
1	Total	19071	17.16
2	Maximum	1785	1.61
3	Minimum	1235	1.11
4	Average	1589.25	1.43

3. Various Measures Adopted for Energy Conservation:

- Usage of Energy Efficient LED fittings
- Installation of Solar Thermal Water Heating System at Hostel.

4. Usage of Renewable Energy Source:

- The College has installed Solar Thermal Water Heating System at Hostel.

5. Waste Management:

5.1 Segregation of Waste at Source:

The Waste is segregated at source. Waste Bins are kept at various locations.

5.2 Sanitary Waste Management:

The Sanitary Waste is handed over to Ayurvedic College for further disposal.

5.3 Chemicals' Storage & Fumes' Management:

Hazardous chemicals are kept away from the reach of students in the fumigation Chamber.



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5.4 Liquid Waste Management:

The College has made provision of a Septic Tank, for disposal of Liquid Waste.

6. Rain Water Management:

The rain water falling on the terrace is used to increase the underground water table.

7. Green & Sustainable Practices:

- Good Internal Roads & Internal Tree Plantation
- Provision of Ramp for Divyangajan
- Creation of Awareness on Clean India

8. Assumption:

- 1 kWh (Unit) of Electrical Energy releases **0.9 Kg of CO₂** into atmosphere

9. Reference:

- For CO₂ calculations: www.tatapower.com



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ABBREVIATIONS

SWGP	: Shri Wagheshwar Gramvikas Pratishthan
LED	: Light Emitting Diode
kWh	: kilo-Watt Hour
MT	: Metric Ton
CO ₂	: Carbon Di Oxide



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CHAPTER-I

INTRODUCTION

1.1 Objectives:

1. To study present Energy Consumption
2. To Study the present CO₂ emissions
3. To study Usage of Renewable Energy
4. To study Waste Management practices
5. To study Green & Sustainable Practices

1.2 Table No-1: General Details of College:

No	Head	Particulars
1	Name	Shri Wagheshwar Gramvikas Pratishthan's Loknete Shri Dada Patil Pharate College Of Pharmacy,
2	Address	Mandavgan Pharate, Taluka: Shirur, District: Pune 412 211
3	Affiliation	Savitribai Phule Pune University

1.3 Google Earth Image:



College
Campus



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CHAPTER-II

STUDY OF PRESENT ENERGY CONSUMPTION

In this chapter, we present the analysis of last year Electricity Energy Consumption

Table No 2: Electrical Energy Purchase Analysis- 2021-22:

No	Month	Energy Consumed, kWh
1	Jul-22	1580
2	Aug-22	1660
3	Sep-22	1705
4	Oct-22	1668
5	Nov-22	1335
6	Dec-22	1235
7	Jan-23	1668
8	Feb-23	1785
9	Mar-23	1556
10	Apr-23	1436
11	May-23	1690
12	Jun-23	1753
13	Total	19071
14	Maximum	1785
15	Minimum	1235
16	Average	1589.25



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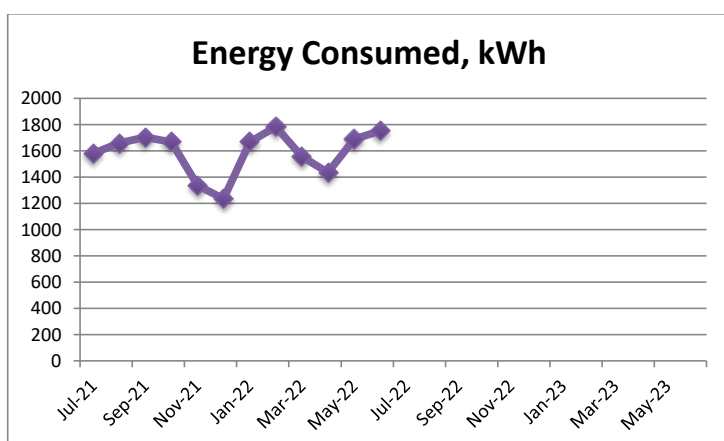
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Chart No 1: To study the variation of Month wise Energy Consumed, kWh:





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CHAPTER-III

CARBON FOOT PRINTING

A Carbon Foot print is defined as the Total Greenhouse Gas emissions, emitted due to various activities. **Basis for computation of CO₂ Emissions:**

- **1 kWh** of Electrical Energy releases **0.9 Kg of CO₂** into atmosphere

Table No 3: Month wise CO₂ Emissions:

No	Month	Energy Consumed, kWh	CO2 Emissions, MT
1	Jul-22	1580	1.42
2	Aug-22	1660	1.49
3	Sep-22	1705	1.53
4	Oct-22	1668	1.50
5	Nov-22	1335	1.20
6	Dec-22	1235	1.11
7	Jan-23	1668	1.50
8	Feb-23	1785	1.61
9	Mar-23	1556	1.40
10	Apr-23	1436	1.29
11	May-23	1690	1.52
12	Jun-23	1753	1.58
13	Total	19071	17.16
14	Maximum	1785	1.61
15	Minimum	1235	1.11
16	Average	1589.25	1.43

Chart No 2: Representation of Month wise CO₂ emissions:



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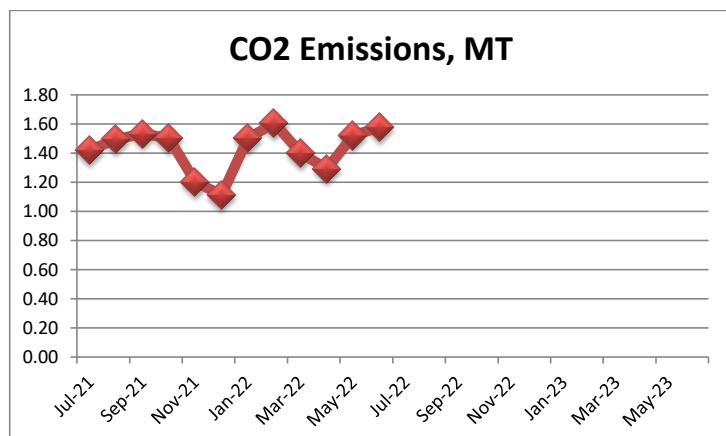
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CHAPTER-IV

STUDY OF USAGE OF RENEWABLE ENERGY

The College has installed Solar Thermal Water Heating System at the Hostel Block

Photograph of Roof Top Solar Thermal Water Heating System:





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CHAPTER-V

STUDY OF WASTE MANAGEMENT

5.1 Segregation of Waste at Source:

The Waste is segregated at source. Waste bins are located at various locations

Photograph of Separate Waste Collection Bin:



5.2 Sanitary Waste Management:

The Sanitary Waste is handed over to Ayurvedic College for further disposal.

5.3 Chemicals' Storage & Fumes' Management:

Hazardous chemicals are kept away from the reach of students in the fumigation Chamber.

Photograph of Fumigation Chamber:



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5.4 Liquid Waste Management:

The College has a Septic Tank, for disposal of Liquid Waste and is cleaned periodically.



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CHAPTER-VI

STUDY OF RAIN WATER MANAGEMENT

The College has implemented the Rain Water Management Project. The College has installed Pipes from the terrace and the Rain water falling on the terrace is gathered and is used to increase the underground Water Table.

Photograph of Rain Water Carrying Pipe:



Rain Water
Carrying Pipe



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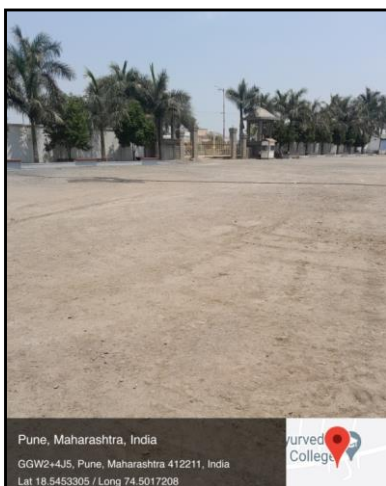
CHAPTER-VII

STUDY OF GREEN & SUSTAINABLE PRACTICES

7.1 Pedestrian Friendly Road:

The College has well maintained pedestrian road as to facilitate the easy movement of the students within the campus.

Photograph of Road within campus:



7.2 Internal Tree Plantation:

The College has well maintained Tree Plantation.

Photograph of Tree Plantation:



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7.3 Provision of Ramp for Divyangajan:

The College has made provision of Ramp for the Divyangajan.

Photograph of Ramp for Divyangajan:





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7.4 Creation of Awareness on Clean & Green Campus by Display of Posters:

The College has displayed posters on Clean & Green Campus.

Photograph of Poster Display Board on Clean & Green Campus:





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ENERGY AUDIT REPORT

of

**Shri Wagheshwar Gramvikas Pratishthan's,
LOKNETE SHRI DADA PATIL PHARATE
COLLEGE OF PHARMACY,
Mandavgan Pharata, Taluka: Shirur, District: Pune**



Year: 2021-22

Prepared by

ENGRESS SERVICES

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Near Mukhtangan English School, Parvati, Pune 411009
Phone: 09890444795 Email: engress123@gmail.com



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REGISTRATION CERTIFICATES

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
fulfilment 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

[Signature]
Controller of Examination

BEE AUDITOR CERTIFICATE

MAHARASHTRA ENERGY DEVELOPMENT AGENCY
Maharashtra Energy Development Agency
(Government of Maharashtra Institution)
Aundh Road, Opposite Spicer College Road, Near Commisariat of Animal Husbandary,
Aundh, Pune, Maharashtra 411067
Ph No: 020-3300430
Email: ee@maharaja.com, Web: www.maharaja.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,
Yashwantrao, 26, Nirmal Bhag Society,
Near Mukundan 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-12.

- 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.

[Signature]
General Manager (EC)

MEDA EMPANELMENT CERTIFICATE



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1	Total	19071	17.16
2	Maximum	1785	1.61
3	Minimum	1235	1.11
4	Average	1589.25	1.43

3. Various Measures Adopted for Energy Conservation:

- Usage of Energy Efficient LED fittings
- Maximum Usage of Day Lighting

4. Usage of Alternate Energy Source:

- The College has installed Solar Thermal Water Heating System at the Hostel Block

5. Usage of LED Lighting to Total Lighting Load:

- The LED Lighting Load is **2.204 kW**.
- The Total Lighting Load is **2.204 kW**.
- The percentage of LED Lighting Total Lighting load works out to be **100 %**



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6. Assumption:

- 1 kWh (Unit) of Electrical Energy releases **0.9 Kg of CO₂** into atmosphere

7. Reference:

- For CO₂ Emission Calculations: www.tatapower.com



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ABBREVIATIONS

AC	: Air conditioner
SWGP	: Shri Wagheshwar Gramvikas Pratishthan
BEE	: Bureau of Energy Efficiency
LED	: Light Emitting Diode
kWh	: kilo-Watt Hour
Qty	: Quantity
W	: Watt
kW	: Kilo Watt
PC	: Personal Computer
MT	: Metric Ton
	Maharashtra State Electricity Distribution
MSEDCL	: Company Limited



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CHAPTER-I

INTRODUCTION

1.1 Objectives:

6. To study Connected Load
7. To study Present Energy Consumption
8. To Study CO₂ emissions
9. To study Scope for usage of Alternate / Renewable Energy
10. To study usage of LED Lighting

1.2 Table No-1: General Details of College:

No	Head	Particulars
1	Name	Shri Wagheshwar Gramvikas Pratishthan's Loknete Shri Dada Patil Pharate College Of Pharmacy,
2	Address	Mandavgan Pharate, Taluka: Shirur, District: Pune 412 211
3	Affiliation	Savitribai Phule Pune University

1.3 Google Earth Image:



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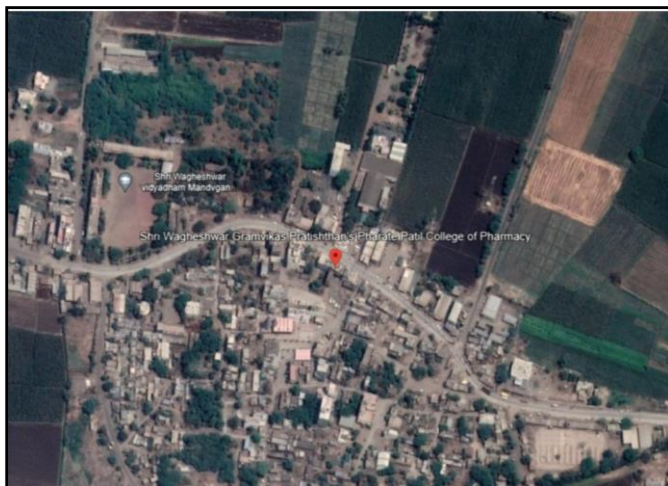
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CHAPTER-II

STUDY OF CONNECTED LOAD

In this chapter, we present the details of various Electrical loads as under

Table No 2: Study of Equipment wise Connected Load:

No	Equipment	Qty	Load, W/unit	Load, kW
1	16 W LED Fitting	19	16	0.304
2	20 W LED Fitting	95	20	1.9
3	Ceiling Fan	26	65	1.69
4	Exhaust Fan	8	52	0.416
5	P C	70	150	10.5
6	Printer	4	175	0.7
7	Other Equipment	14	200	2.8
8	Total			18.3



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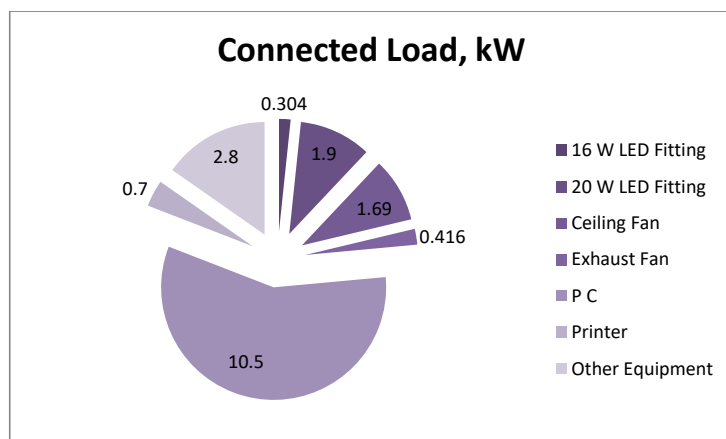
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Chart No 1: Details of Connected Load:





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CHAPTER-III

STUDY OF PRESENT ENERGY CONSUMPTION

In this chapter, we present the analysis of last year Electricity Energy Consumed

Table No 3: Electrical Energy Consumed: 2022-23:

No	Month	Energy Consumed, kWh
1	Jul-22	1580
2	Aug-22	1660
3	Sep-22	1705
4	Oct-22	1668
5	Nov-22	1335
6	Dec-22	1235
7	Jan-23	1668
8	Feb-23	1785
9	Mar-23	1556
10	Apr-23	1436
11	May-23	1690
12	Jun-23	1753
13	Total	19071
14	Maximum	1785



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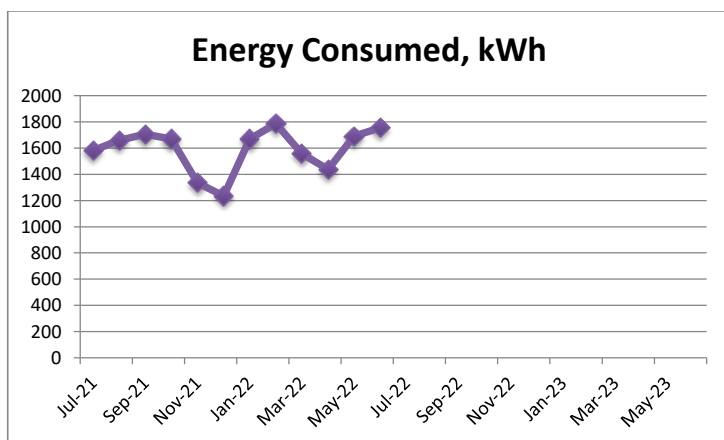
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15	Minimum	1235
16	Average	1589.25

Chart No 2: To study the variation of Month wise Energy Consumed, kWh:





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CHAPTER-IV

CARBON FOOT PRINTING

A Carbon Foot print is defined as the Total Greenhouse Gas emissions, emitted due to various activities. **Basis for computation of CO₂ Emissions:**

- **1 kWh** of Electrical Energy releases **0.9 Kg of CO₂** into atmosphere

Table No 4: Month wise CO₂ Emissions:

No	Month	Energy Consumed, kWh	CO2 Emissions, MT
1	Jul-22	1580	1.42
2	Aug-22	1660	1.49
3	Sep-22	1705	1.53
4	Oct-22	1668	1.50
5	Nov-22	1335	1.20
6	Dec-22	1235	1.11
7	Jan-23	1668	1.50
8	Feb-23	1785	1.61
9	Mar-23	1556	1.40



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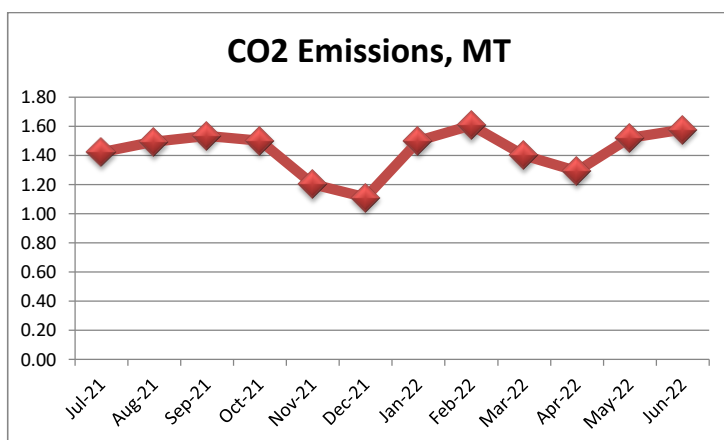
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10	Apr-23	1436	1.29
11	May-23	1690	1.52
12	Jun-23	1753	1.58
13	Total	19071	17.16
14	Maximum	1785	1.61
15	Minimum	1235	1.11
16	Average	1589.25	1.43

Chart No 3: Representation of Month wise CO₂ Emissions:





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CHAPTER-V

STUDY OF USAGE OF ALTERNATE ENERGY

The College has installed Solar Thermal Water Heating System at the Hostel Block

Photograph of Roof Top Solar Thermal Water Heating System:



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CHAPTER-VI

STUDY OF USAGE OF LED LIGHTS

In the following Table, we present the percentage of usage of LED lights to Total Lighting Load.

Table No 5: Study of % LED Lighting Load to Total Lighting Load:

No	Particulars	Value	Unit
----	-------------	-------	------



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1	No of 16 W LED Fittings	19	Nos
2	Load of 16 W LED Fitting	16	W/unit
3	Total Load of 16 W LED fitting	0.304	kW
4	No of 20 W LED Fittings	95	Nos
5	Load of 20 W LED Fitting	20	W/unit
6	Total Load of 20 W LED fitting	1.9	kW
7	Total LED Lighting Load=3+6	2.204	kW
8	Total Lighting Load=3+6	2.204	kW
9	% of LEDs to Total Lighting Load= $7 \times 100 / 8$	100	%

**ENVIRONMETAL AUDIT REPORT
Of**

**Shri Wagheshwar Gramvikas Pratishthan's,
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COLLEGE OF PHARMACY,
Mandavgan Pharata, Taluka: Shirur, District: Pune**



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Year: 2022-23

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REGISTRATION CERTIFICATES



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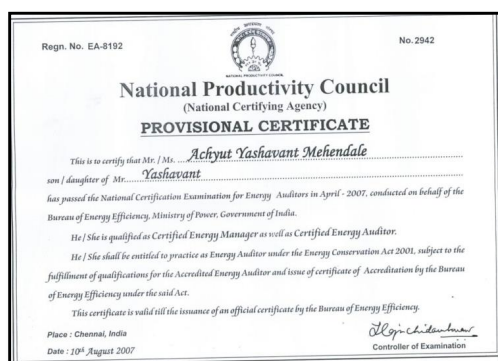
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BEE AUDITOR CERTIFICATE



MEDA EMPANELMENT CERTIFICATE



ASSOCHAM GEM CP CERTIFICATE



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ACKNOWLEDGEMENT

We Engress Services, Pune, express our sincere gratitude to the management of Shri Wagheshwar Gramvikas Pratishthan's Loknete Shri Dada Patil Pharate College Of Pharmacy, Mandavgan Pharate, Taluka: Shirur, District: Pune, for awarding us the assignment of Environmental Audit of their Mandavgan campus for the Year: 2022-23.

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



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EXECUTIVE SUMMARY

1. Shri Wagheshwar Gramvikas Pratishthan's Loknete Shri Dada Patil Pharate College Of Pharmacy, Mandavgan Pharate, Taluka: Shirur, District: Pune consumes Energy in the form of **Electrical Energy**; used for various gadgets, Office & other facilities.

2. Pollution due to Day to Day Activities:

- **Air pollution:** Mainly CO₂ on account of Electricity Consumption
- **Solid Waste:** Bio degradable Waste, Garden Waste, Recyclable Waste and Human Waste
- **Liquid Waste:** Human Liquid waste

3. Energy Consumed & CO₂ Emission:

No	Parameter	Energy Consumed, kWh	CO ₂ emissions, MT
1	Total	19071	17.16
2	Maximum	1785	1.61
3	Minimum	1235	1.11
4	Average	1589.25	1.43

4. Various Measures Adopted for Environmental Conservation:

- Usage of Energy Efficient LED fittings
- Maximum Usage of Day Lighting
- Installation of Solar Thermal Water Heating System at Hostel.

5. Usage of Renewable Energy:

- The College has installed Solar Thermal Water Heating System at Hostel.

6. Indoor Air Quality Parameters:

No	Parameter/Value	AQI	PM-2.5	PM-10
1	Maximum	53	32	40
2	Minimum	43	24	27



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7. Indoor Comfort Condition Parameters:

No	Parameter/Value	Temperature, °C	Humidity, %	Lux Level	Noise Level, dB
1	Maximum	29.1	59.1	189	45
2	Minimum	28.8	58.8	98	39.6

8. Waste Management:

8.1 Segregation of Waste at Source:

The Waste is segregated at source. Waste Bins are kept at various locations.

8.2 Sanitary Waste Management:

The Sanitary Waste is handed over to Ayurvedic College for further disposal.

8.3 Chemicals' Storage & Fumes' Management:

Hazardous chemicals are kept away from the reach of students in the fumigation Chamber.

8.4 Liquid Waste Management:

The College has made provision of a Septic Tank, for disposal of Liquid Waste.

9. Rain Water Management:

The rain water falling on the terrace is used to increase the underground water table.

10. Eco Friendly Practices:

- Internal Tree Plantation
- Creation of Awareness on Clean & Green Campus by Display of Posters

11. Assumption:



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- 1 kWh (Unit) of Electrical Energy releases **0.9 Kg of CO₂** into atmosphere

12. References:

1. For CO₂ calculations: www.tatapower.com
2. For Various Indoor Air Parameters: www.ishrae.com
3. For AQI Quality Standards: www.cpcb.com



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ABBREVIATIONS

SWGP	: Shri Wagheshwar Gramvikas Pratishthan
AQI	: Air Quality Index
LED	: Light Emitting Diode
kWh	: kilo-Watt Hour
MT	: Metric Ton
CO ₂	: Carbon Di Oxide
ISHRAE	: The Indian Society of Heating, Refrigerating & Air conditioning Engineers
CPCB	: Central Pollution Control Board
LPD	: Liters Per Day
NSS	: National Service Scheme
PM	: Particulate Matter



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CHAPTER-I

INTRODUCTION

1.1 Important Definitions:

1.1.1 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

1.1.2. Environmental Audit: Definition:

An audit which aims at verification and validation to ensure that various environmental laws are complied with and adequate care has been taken towards environmental protection and preservation

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"

1.1.3. Environmental Pollutant: means any solid, liquid and gaseous substance present in the concentration as may be, or tend to be, injurious to Environment.

1.1.4. Relevant Environmental Laws in India: Table No-1:

1927	The Indian Forest Act
1972	The Wildlife Protection Act
1974	The Water (Prevention and Control of Pollution) Act
1977	The Water (Prevention & Control of Pollution) Cess Act
1980	The Forest (Conservation) Act
1981	The Air (Prevention and Control of Pollution) Act
1986	The Environment Protection Act
1991	The Public Liability Insurance Act
2002	The Biological Diversity Act
2010	The National Green Tribunal Act

1.1.5. Some Important Environmental Rules in India: Table No-2:



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1989	Hazardous Waste (Management and Handling) Rules
1989	Manufacture, Storage and Import of Hazardous Chemical Rules
2000	Municipal Solid Waste (Management and Handling) Rules
1998	The Biomedical Waste (Management and Handling) Rules
1999	The Environment (Siting for Industrial Projects) Rules
2000	Noise Pollution (Regulation and Control) Rules
2000	Ozone Depleting Substances (Regulation and Control) Rules
2011	E-waste (Management and Handling) Rules
2011	National Green Tribunal (Practices and Procedure) Rules
2011	Plastic Waste (Management and Handling) Rules

1.1.6 National Environmental Plans & Policy Documents: Table No-3:

1.	National Forest Policy, 1988
2.	National Water Policy, 2002
3.	National Environment Policy or NEP (2006)
4.	National Conservation Strategy and Policy Statement on Environment and Development, 1992
5.	Policy Statement for Abatement of Pollution (1992)
6.	National Action Plan on Climate Change
7.	Vision Statement on Environment and Human Health
8.	Technology Vision 2030 (The Energy Research College)
9.	Addressing Energy Security and Climate Change (MoEF and Bureau of Energy Efficiency)
10.	The Road to Copenhagen; India's Position on Climate Change Issues (MoEF)

1.2 Objectives:

11. To study Recourse Consumption and CO₂ Emission
12. To Study CO₂ Emission Reduction
13. To Study Indoor Air Quality
14. To study Indoor Comfort Parameters
15. To Study Waste Management Practices
16. To Study Rain Water Management
17. To study Environment Friendly Practices

1.3 Google Earth Image:



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1.4 Table No 4: General Details of College:

No	Head	Particulars
1	Name	Shri Wagheshwar Gramvikas Pratishthan's Loknete Shri Dada Patil Pharate College Of Pharmacy,
2	Address	Mandavgan Pharate, Taluka: Shirur, District: Pune 412 211
3	Affiliation	Savitribai Phule Pune University



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CHAPTER-II

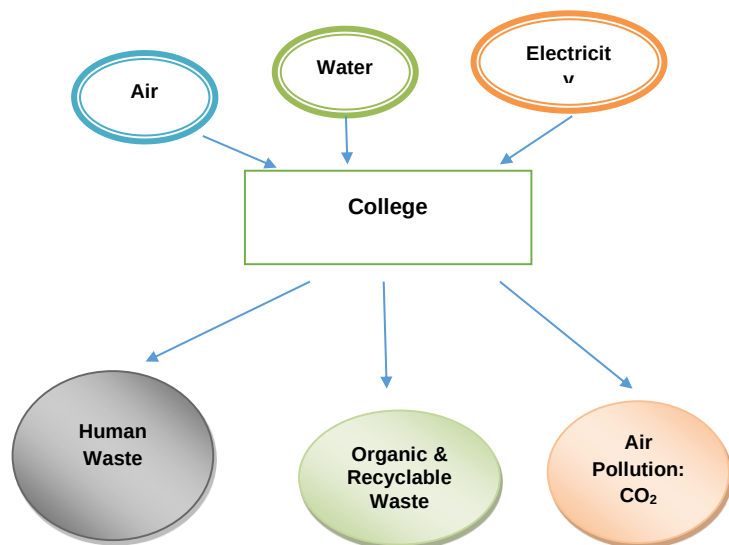
STUDY OF RESOURCE CONSUMPTION & CO₂ EMISSION

The College consumes following Natural/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 College as System:



We compute the Generation of CO₂ on account of consumption of Electrical Energy as under. The basis of Calculation for CO₂ emissions due to Electrical Energy are: 1 Unit (kWh) of Electrical Energy releases **0.9 Kg of CO₂** into atmosphere.

Table No 5: Electrical Energy Usage & CO₂ Emission: 21-22:



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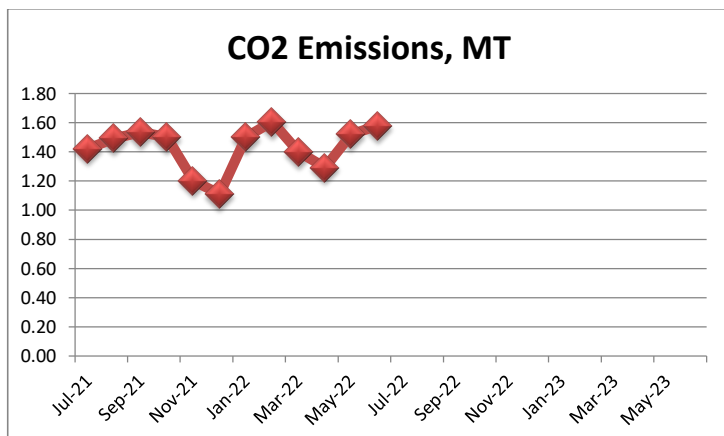
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No	Month	Energy Consumed, kWh	CO2 Emissions, MT
1	Jul-22	1580	1.42
2	Aug-22	1660	1.49
3	Sep-22	1705	1.53
4	Oct-22	1668	1.50
5	Nov-22	1335	1.20
6	Dec-22	1235	1.11
7	Jan-23	1668	1.50
8	Feb-23	1785	1.61
9	Mar-23	1556	1.40
10	Apr-23	1436	1.29
11	May-23	1690	1.52
12	Jun-23	1753	1.58
13	Total	19071	17.16
14	Maximum	1785	1.61
15	Minimum	1235	1.11
16	Average	1589.25	1.43

Chart No 2: To study CO₂ Emission:





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CHAPTER-III

STUDY OF USAGE OF RENEWABLE ENERGY

The College has installed Solar Thermal Water Heating System at the Hostel Block

Photograph of Roof Top Solar Thermal Water Heating System:





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CHAPTER-IV

STUDY OF INDOOR AIR QUALITY

4.1 Importance of Air Quality:

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

By volume, Dry Air contains 78.09% Nitrogen, 20.95% Oxygen, 0.93% Argon, 0.039% carbon dioxide, and small amounts of other gases.

On average, a person inhales about **14,000 liters** of air every day. Therefore, poor air quality may affect the quality of life now and for future generations by affecting the health, the environment, the economy and the city's livability.

Rapid urbanization and industrialization has added other elements/compounds to the pure air and thus caused the increase in pollution. In order to prevent, control and abate air pollution, the Air (Prevention and Control of Pollution) Act was enacted in 1981.

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

According to Section 2(b) of Air (Prevention and control of pollution) Act, 1981 '**air pollution**' has been defined as '**the presence in the atmosphere of any air pollutant.**'

4.2 Air Quality Index:

An **Air Quality Index (AQI)** is a number used by government agencies to measure the **air pollution** levels and communicate it to the population.

We present herewith following important Parameters.

1. AQI- Air Quality Index
2. PM-2.5- Particulate Matter of Size 2.5 micron
3. PM-10- Particulate Matter of Size 10 micron

Table No 6: Indoor Air Quality Parameters:



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No	Location	AQI	PM2.5	PM10
1	Chemistry Lab	50	30	33
2	Principal Cabin	43	24	27
3	First Floor	52	32	40
4	Pharmacology Lab	53	31	40
5	Pharmaceutics Lab	46	28	33
	Maximum	53	32	40
	Minimum	43	24	27



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CHAPTER-V

STUDY OF INDOOR AIR CONDITION PARAMETERS

In this Chapter, we present the various Indoor Comfort Parameters measured during the Audit.

The Parameters include:

1. Temperature
2. Humidity
3. Lux Level
4. Noise Level.

Table No 7: Study of Indoor Comfort Parameters:

No	Location	Temperature, °C	Humidity, %	Lux Level	Noise Level, dB
1	Chemistry Lab	28.8	58.8	98	39.6
2	Principal Cabin	28.9	58.8	167	41
3	First Floor	28.9	58.8	156	42
4	Pharmacology Lab	29	59	147	45
5	Pharmaceutics Lab	29.1	59.1	189	45
	Maximum	29.1	59.1	189	45
	Minimum	28.8	58.8	98	39.6



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Founder Secretary



Dr. H. V. Kamble
Principal

CHAPTER-VI

STUDY OF WASTE MANAGEMENT

6.1 Segregation of Waste at Source:

The Waste is segregated at source. Waste bins are located at various locations

Photograph of Separate Waste Collection Bin:



6.2 Sanitary Waste Management:

The Sanitary Waste is handed over to Ayurvedic College for further disposal.

6.3 Chemicals' Storage & Fumes' Management:

Hazardous chemicals are kept away from the reach of students in the fumigation Chamber.

Photograph of Fumigation Chamber:



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6.4 Liquid Waste Management:

The College has a Septic Tank, for disposal of Liquid Waste and is cleaned periodically.



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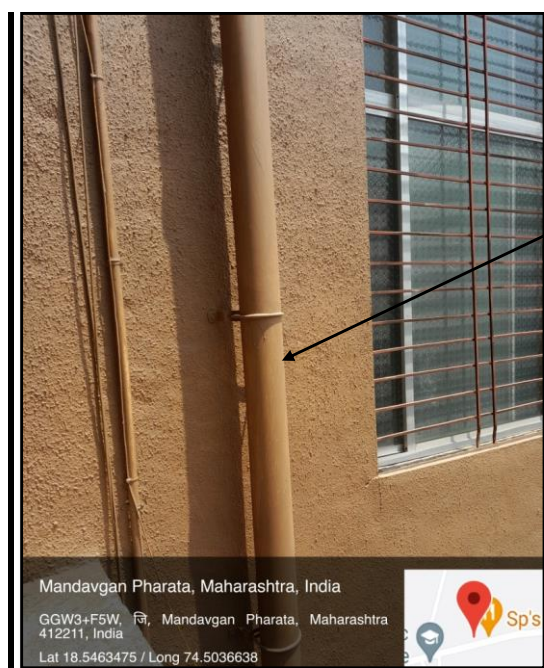
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Principal

CHAPTER-VII

STUDY OF RAIN WATER MANAGEMENT

The College has implemented the Rain Water Management Project. The College has installed Pipes from the terrace and the Rain water falling on the terrace is gathered and is used to increase the underground Water Table.

Photograph of Rain Water Carrying Pipe:



Rain Water
Carrying Pipe



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CHAPTER VIII

STUDY OF ENVIRONMENT FRIENDLY INITIATIVES

8.1 Internal Tree Plantation:

The College has well maintained Tree plantation.

Photograph of Tree Plantation:



8.2 Creation of Awareness on Clean & Green Campus by Display of Posters:

The College has displayed posters on Clean & Green Campus.

Photograph of Poster Display Board on Clean & Green Campus:



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Principal

ANNEXURE-I:

AIR QUALITY, NOISE & INDOOR COMFORT STANDARDS:

1. Category Wise Air Quality Index Values & Concentration of PM 2.5 & PM10:

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 +

2. Recommended Noise Level Standards:

No	Location	Noise Level dB
1	Auditoriums	20-25
2	Outdoor Playground	55
3	Occupied Class Room	40-45
4	Un occupied Class Room	35
5	Apartment, Homes	35-40
6	Offices	45-50
7	Libraries	35-40
8	Restaurants	50-55



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3. Thermal Comfort Conditions: For Non-conditioned Buildings:

No	Parameter	Value
1	Temperature	Less Than 33°C
2	Humidity	Less Than 70%



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Dr. H. V. Kamble
Principal

ENGRESS SERVICES

Yashashree, 26, Nirmal Bag Society,
Near Muktang English School, Parvati, Pune 411 009
Tel: 020-24220747 Email: engress123@gmail.com

Ref: ES/LSDP/23-24/01

Date: 20/06/2023

CERTIFICATE

This is to certify that we have conducted Energy Audit at Shri Wagheshwar Gramvikas Pratishthan's Loknete Shri Dada Patil Pharate College Of Pharmacy, Mandavgan Pharate, Taluka: Shirur, District: Pune in the year 2021-22.

The College has adopted following Energy Efficient Practices:

- Usage of Energy Efficient LED Fittings
- Maximum usage of Day Lighting
- Installation of Solar Thermal Water Heating System at Hostel Block

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,
BE- Mechanical, M Tech- Energy,
Certified Energy Auditor: EA-8192



Hon. Mr. R. V. Pharate
Founder President

Shri Wagheshwar Gramvikas Pratishthan's
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Principal

ENGRESS SERVICES

Yashashree, 26, Nirmal Bag Society,
Near Muktang English School, Parvati, Pune 411 009
Tel: 020-24220747 Email: engress123@gmail.com

Ref: ES/ LSDP/23-24/02

Date: 20/6/2023

CERTIFICATE

This is to certify that we have conducted Green Audit at Shri Wagheshwar Gramvikas Pratishthan's Loknete Shri Dada Patil Pharate College Of Pharmacy, Mandavgan Pharate, Taluka: Shirur, District: Pune in the year 2021-22.

The College has adopted following Green & Sustainable Practices:

- Usage of Energy Efficient LED Fittings
- Installation of Solar Thermal Water Heating System at Hostel
- Segregation of Waste at source
- Provision of Fumigation Chamber, for Fumes' Management
- Provision of Septic Tank, for Disposal of Liquid Waste
- Installation of Rain Water Management Project
- Maintenance of Good Internal Roads
- Tree Plantation in the campus
- Provision of Ramp for Divyangajan
- Creation of awareness on Clean & Green Campus 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,
Certified Energy Auditor, EA-8192
ASSOCHAM GEM Certified Professional: GEM: 22/788

Engress Services, Pune
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Founder President

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Dr. H. V. Kamble
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ENGRESS SERVICES

Yashashree, 26, Nirmal Bag Society,
Near Mukhtangan English School, Parvati, Pune 411 009
Tel: 09890444795 Email: engress123@gmail.com

Ref: ES/LSDP/23-24/03

Date: 20/6/2023

CERTIFICATE

This is to certify that we have conducted Environmental Audit at Shri Wagheshwar Gramvikas Pratishthan's Loknete Shri Dada Patil Pharate College Of Pharmacy, Mandavgan Pharate, Taluka: Shirur, District: Pune in the year 2021-22.

The College has adopted following Environment Friendly Practices:

- Usage of Energy Efficient LED Fittings
- Installation of Solar Thermal Water Heating System at Hostel
- Segregation of Waste at source
- Provision of Fumigation Chamber, for Fumes' Management
- Provision of Septic Tank, for Disposal of Liquid Waste
- Installation of Rain Water Management Project
- Maintenance of Good Internal Roads
- Tree Plantation in the campus
- Creation of awareness on Clean & Green Campus 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,

A Y Mehendale,
Certified Energy Auditor, EA-8192
ASSOCHAM GEM Certified Professional: GEM: 22/788



Hon. Mr. R. V. Pharate
Founder President

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