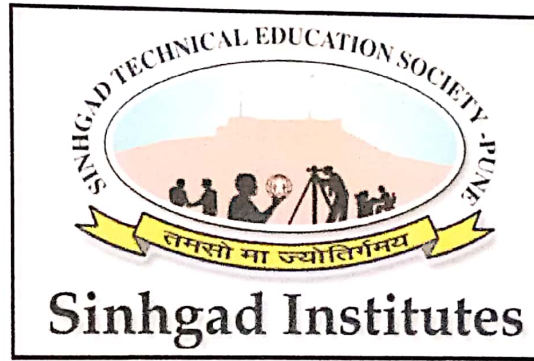


ENERGY AUDIT REPORT
of
NBN SINHGAD SCHOOL OF ENGINEERING,
S. 10/1, Ambegaon (Bk.), Pune 411 041

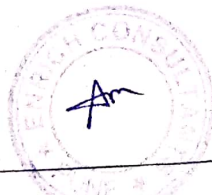


Year: 2019-20

Prepared by

Enrich Consultants

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



MAHARASHTRA ENERGY DEVELOPMENT AGENCY



Maharashtra Energy Development Agency

(A Government of Maharashtra undertaking)

2nd Floor, MHADA Commercial Complex, Opp. Tridal Nagar, Yerwada, Pune 411 006.

Ph No: 020-26614393/266144403

Email: eee@mahautja.com, Web: www.mahautja.com

ECN/2018-19/CR-05/4174

19th September, 2018

**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 : **Enrich Consultants**
Yashashree, Plot No. 26, Nirmal Bag Society,
Near Mukangan English School,
Parvati, Pune - 411009.

Registration Category : *Empanelled Consultant for Energy Conservation Programme*

Registration Number : *MEDA/ECN/CR-05/2018-19/EA-03*

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- This empanelment is valid till **31st March 2021** 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.


(Smita Kudarkar)
General Manager (FC)

Enrich Consultants

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

Ref: EC/NBNSOIE/19-20/01

Date: 12/7/2020

CERTIFICATE

This is to certify that we have conducted Energy Audit at NBN Sinhgad School of Engineering, S. No. 10/1, Ambegaon (Bk.), Pune 411 041 in the year 19-20.

The College has adopted following Energy Efficient Practices:

- Usage of Energy Efficient LED Fittings
- Installation of Solar Thermal Water Heating System at Hostel blocks
- Usage of BEE STAR Rated Equipment
- Maximum Usage of Day Lighting

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

For Enrich Consultants,

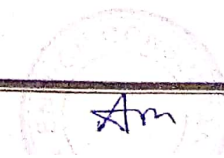


A Y Mehendale,
Certified Energy Auditor
EA-8192



INDEX

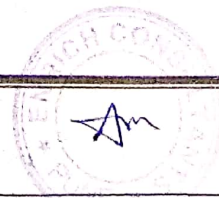
No	Particulars	Page No
I	Acknowledgement	5
II	Executive Summary	6
III	Abbreviations	7
1	Introduction	8
2	Study of Connected Load	9
3	Study of Present Energy Consumption	10
4	Study of Carbon Foot printing	12
5	Study of Usage of Alternate Energy	14
6	Study of Usage of LED Lights	15



ACKNOWLEDGEMENT

We at Enrich Consultants, Pune, express our sincere gratitude to the management of NBN Sinhgad School of Engineering, Vadgaon (Bk.), Pune, for awarding us the assignment of Energy Audit of their Ambegaon (Bk.) Campus for the Year: 19-20.

We are thankful to the Head of the Departments and staff members for helping us during the field study.



EXECUTIVE SUMMARY

1. NBN Sinhgad School of Engineering, Ambegaon (Bk.) Pune consumes Energy in the form of Electrical Energy used for various gadgets, Office & other facilities.

2. Present Energy Consumption:

No	Parameter/ Value	Energy Consumed, kWh	CO ₂ Emissions, MT
1	Total	532511	426.01
2	Maximum	49157	39.33
3	Minimum	31331	25.06
4	Average	44376	35.50

3. Various measures adopted for Energy Conservation:

- Usage of LED Lights
- Installation of Solar Thermal Water Heating System.

4. Usage of Alternate Energy Source:

1. The College has installed Solar Thermal Water Heating System at the Hostel
2. The College has yet to install the Roof Top Solar PV System.

5. Percentage of Lighting Power Requirements met by LED bulbs:

- The total lighting Load is 31.8 kW.
- The total LED Lighting Load is 5.4 kW.
- The percentage of usage of LED to the total lighting load is 16.98 %

6. Notes & Assumptions:

1. 1 kWh of Electrical Energy releases 0.8 Kg of CO₂ into atmosphere

ABBREVIATIONS

AC	: Air conditioner
FTL	: Fluorescent Tube Light
LED	: Light Emitting Diode
kWh	: kilo-Watt Hour
Qty	: Quantity
W	: Watt
kW	: Kilo Watt
PC	: Personal Computer
MT	: Metric Ton
LPD	: Liters Per Day



CHAPTER-I INTRODUCTION

1.1 Objectives:

1. To study the Connected Load
2. To Study present Energy Consumption
3. To compute CO₂ emissions
4. To study usage of Renewable Energy
5. To study usage of LED Lighting

1.2 Table No 1: General Details of College:

No	Head	Particulars
1	Name of Institution	NBN Sinhgad School of Engineering
2	Address	S. No. 10/1, Ambegaon (Bk.), Pune 411 041
3	Affiliation	Savitribai Phule Pune University



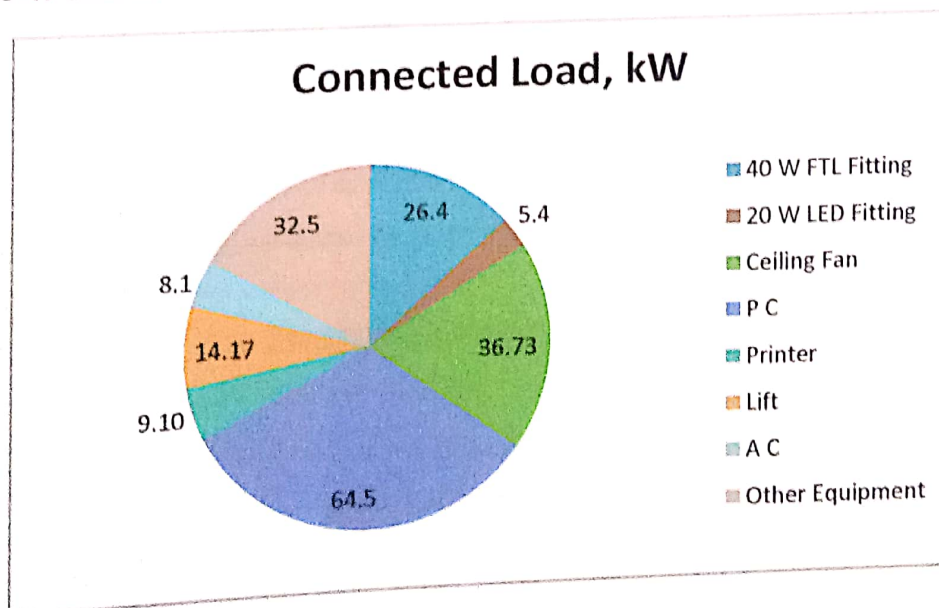
CHAPTER-II STUDY OF CONNECTED LOAD

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

Table No 2: Details of Overall Connected Load:

No	Equipment	Qty	Load, W/Unit	Load, kW
1	40 W FTL Fitting	660	40	26.4
2	20 W LED Fitting	270	20	5.4
3	Ceiling Fan	565	65	36.73
4	P C	430	150	64.5
5	Printer	52	175	9.10
6	Lift	2	7087	14.17
7	A C	4	2025	8.1
8	Other Equipment	130	250	32.5
9	Total			197

Chart No-1: Overall Connected Load:



CHAPTER-III

STUDY OF PRESENT ENERGY CONSUMPTION

In this chapter, we present the analysis of last year Electricity Bills
Table No 3: Electrical Bill Analysis- 2019-20:

No	Month	Energy Consumed, kWh
1	Apr-19	47780
2	May-19	43658
3	Jun-19	31331
4	Jul-19	43556
5	Aug-19	47661
6	Sep-19	49157
7	Oct-19	46886
8	Nov-19	45812
9	Dec-19	44144
10	Jan-20	44378
11	Feb-20	44075
12	Mar-20	44076
13	Total	532511
14	Maximum	49157
15	Minimum	31331
16	Average	44376

Chart No 2: To study the variation of Monthly Energy Consumption, kWh:

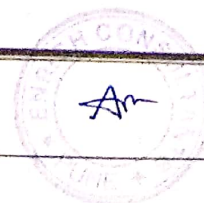
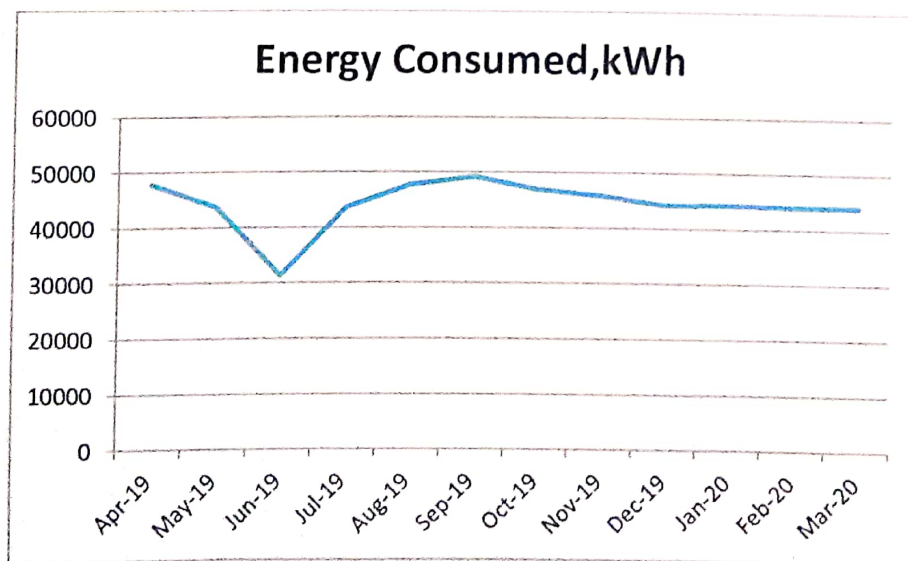


Table No 4: Various Important Parameters:

No	Parameter/ Value	Energy Consumed, kWh
1	Total	532511
2	Maximum	49157
3	Minimum	31331
4	Average	44376

CHAPTER-IV CARBON FOOTPRINTING

A Carbon Foot print is defined as the Total Greenhouse Gas emissions, emitted due to various activities.

In this we compute the emissions of Carbon-Di-Oxide, by usage of the various forms of Energy used by the College for performing its day to day activities. The College uses Electrical Energy for various Electrical gadgets.

Basis for computation of CO₂ Emissions:

- 1 Unit (kWh) of Electrical Energy releases 0.8 Kg of CO₂ into atmosphere

Table No 5: Month wise CO₂ Emissions:

No	Month	Energy Consumed, kWh	CO ₂ Emissions, MT
1	Apr-19	47780	38.22
2	May-19	43658	34.93
3	Jun-19	31331	25.06
4	Jul-19	43556	34.84
5	Aug-19	47661	38.13
6	Sep-19	49157	39.33
7	Oct-19	46886	37.51
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13	Total	532511	426.01
14	Maximum	49157	39.33
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16	Average	44376	35.50

Chart No 3: Representation of Month wise CO₂Emissions:

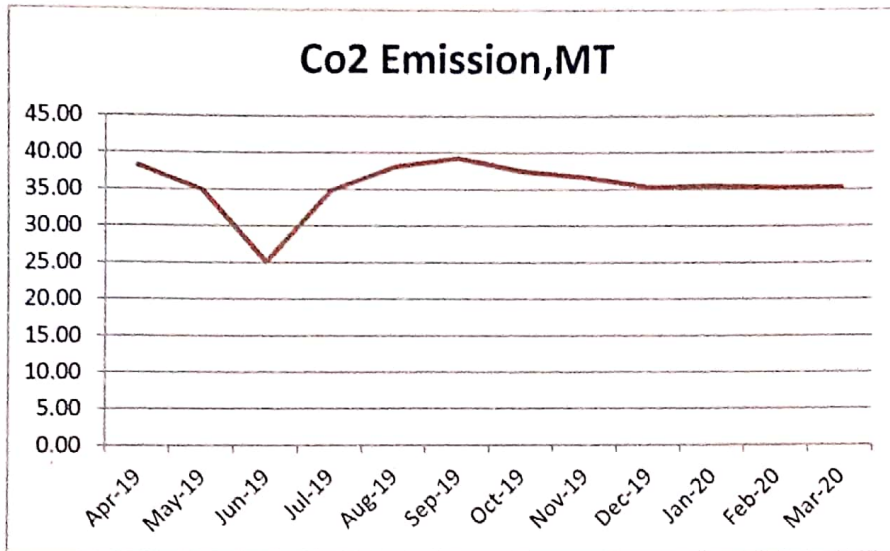
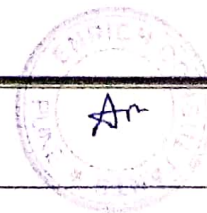


Table No 6: Various Important Parameters:

No	Parameter/ Value	Energy Consumed, kWh	CO ₂ Emissions, MT
1	Total	532511	426.01
2	Maximum	49157	39.33
3	Minimum	31331	25.06
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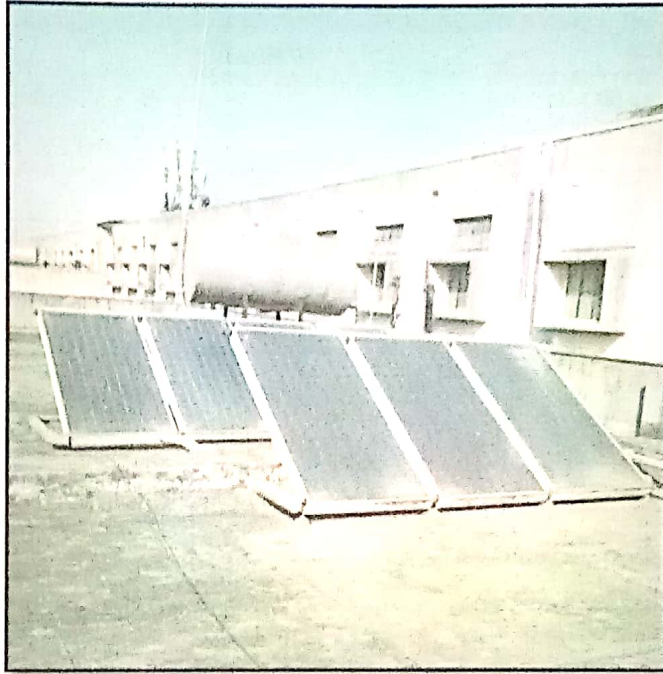


CHAPTER-V

STUDY OF USAGE OF ALTERNATE ENERGY

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

Photograph of Solar Thermal Water Heating System:



CHAPTER VI STUDY OF USAGE OF LED LIGHTS

In the following Table, we present the percentage of annual Lighting load met by LED lights.

Table No 7: Computation of % of Annual LED Lighting Load:

No	Particulars	Value	Unit
1	No of 40 W FTL Fittings	660	Nos
2	No of 20 W LED Fittings	270	Nos
3	Electrical Load of 40 W FTL Fitting	40	W/Unit
4	Total Load of 20 W LED Fiting	20	W/Unit
5	Total Load of 40 W FTL Fittings	26.4	kW
6	Total Load of 20 W LED Fittings	5.4	kW
7	Total Lighting Load = 5+6	31.8	kW
8	Total LED Lighting Load = 6	5.4	kW
9	% of LED Lighting to Annual Lighting Load = $8 \times 100 / 7$	16.98	%

GREEN AUDIT REPORT
of
NBN SINHGAD SCHOOL OF ENGINEERING,
S. 10/1, Ambegaon (Bk.), Pune 411 041



Year: 2019-20

Prepared by

Enrich Consultants

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



MAHARASHTRA ENERGY DEVELOPMENT AGENCY



Maharashtra Energy Development Agency

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ECN/2018-19/CR-05/4174

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(Smita Kudarikar)
General Manager (EC)

Enrich Consultants

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

Ref: EC/NBNSSOE/19-20/02

Date: 12/7/2020

CERTIFICATE

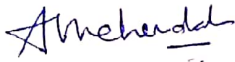
This is to certify that we have conducted Green Audit at NBN School of Engineering, S. No. 10/1, Ambegaon (Bk.), Pune 411 041 in the year 2019-20.

The College has adopted following Green practices:

- Usage of Energy Efficient LED Fittings
- Installation of Solar Thermal Water Heating System
- Segregation of Waste at source
- Installation of 275 KLPD Sewage Treatment Plant
- Installation of Rain Water Management Project
- Maintenance of good internal roads in the campus
- Creation of awareness on Resource 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 Enrich Consultants,



A Y Mehendale,
Certified Energy Auditor
EA-8192



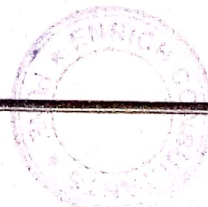
INDEX

No	Particulars	Page No
I	Acknowledgement	5
II	Executive Summary	6
III	Abbreviations	8
1	Introduction	9
2	Study of Present Energy Consumption	10
3	Study of Carbon Foot printing	12
4	Study of Usage of Renewable Energy	14
5	Study of Waste Management	15
6	Study of Rain Water Management	16
7	Study of Green & Sustainable Practices	17

ACKNOWLEDGEMENT

We at Enrich Consultants, Pune, express our sincere gratitude to the management of NBN Sinhgad School of Engineering, Ambegaon (Bk.), Pune, for awarding us the assignment of Green Audit of their Vadgaon Campus for the Year: 2019-20.

We are thankful to the Head of Departments & staff members for helping us during the field study.



EXECUTIVE SUMMARY

1. NBN Sinhgad School of Engineering, Vadgaon (Bk.) Pune consumes Energy in the form of Electrical Energy used for various gadgets, Office & other facilities.

2. Present Energy Consumption & CO₂ Emission:

No	Parameter/ Value	Energy Consumed, kWh	CO ₂ Emissions, MT
1	Total	532511	426.01
2	Maximum	49157	39.33
3	Minimum	31331	25.06
4	Average	44376	35.50

3. Various measures adopted for Energy Conservation:

- Usage of LED Lights
- Installation of Solar Thermal Water Heating System

4. Usage of Renewable Energy & Reduction in CO₂ Emission:

The College has installed Solar Thermal Water Heating System at the Hostel Blocks. The College has yet to install the Roof Top Solar PV Plant.

5. Waste Management:

5.1 Solid Waste Management:

The Dry and Wet waste is segregated at the source and is handed over to Authorized Agency for further disposal/recycling.

5.2 Liquid Waste Management:

The College has installed 275 KLPD Sewage Treatment Plant. The treated Water is used for Gardening purpose.

5.3 E-Waste Management:

The E Waste generated is handed over to Authorized Agency for further disposal.

6. Rain Water Management:

The Rain water collected is used to increase the underground Water level.

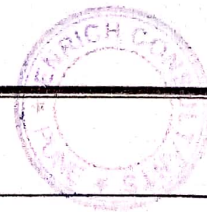
7. Green & Sustainable Practices:

- Good internal roads for easy movement of commuters
- Internal tree plantation in the campus
- Provision of Ramp for Divyangajan

- Creation of awareness on resource conservation by display of posters
- Tree Plantation and Cleanliness Drive events outside the campus

8. Assumption:

1. **1 kWh** of Electrical Energy releases **0.8 Kg** of CO₂ into atmosphere



ABBREVIATIONS

LED	:	Light Emitting Diode
kWh	:	kilo-Watt Hour
MT	:	Metric Ton
CO ₂	:	Carbon Di Oxide
LPD	:	Liters Per Day
NSS	:	National Service Scheme

CHAPTER-I INTRODUCTION

1.1 Objectives:

1. To study present Energy Consumption
2. To compute CO₂ emissions
3. To Study Usage of Renewable Energy
4. To Study Waste Management Practices
5. To Study Rain Water Harvesting
6. To Study Green & Sustainable Initiatives

1.2 Table No 1: General Details of College:

No	Head	Particulars
1	Name of Institution	NBN Sinhgad School of Engineering
2	Address	S. No. 10/1, Ambegaon (Bk.), Pune 411 041
3	Affiliation	Savitribai Phule Pune University

CHAPTER-II STUDY OF PRESENT ENERGY CONSUMPTION

In this chapter, we present the analysis of last year Electricity Bills
Table No 2: Electrical Bill Analysis- 2019-20:

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12	Mar-20	44076
13	Total	532511
14	Maximum	49157
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16	Average	44376

Chart No 1: To study the variation of Monthly Energy Consumption, kWh:

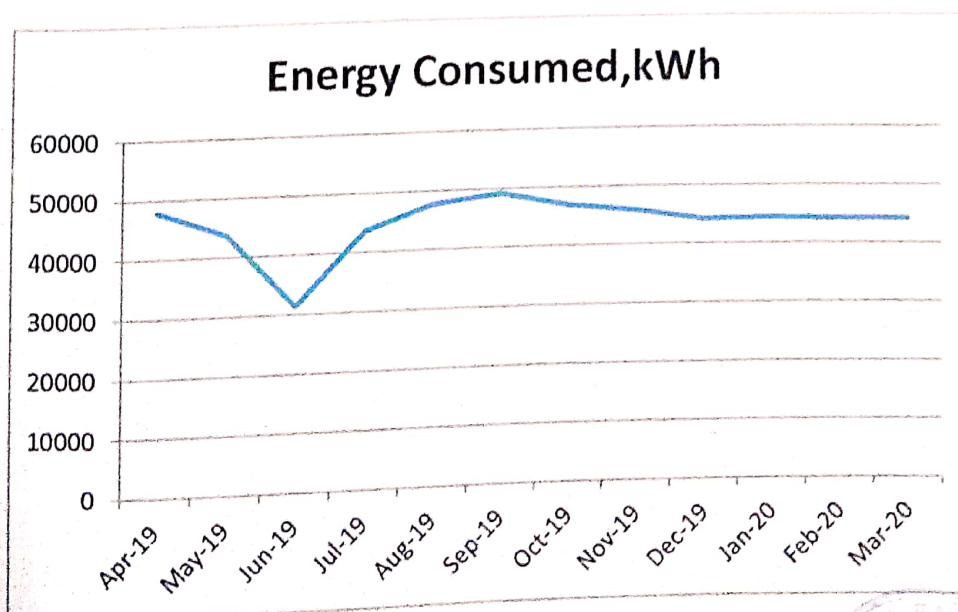


Table No 3: Various Important Parameters:

No	Parameter/ Value	Energy Consumed, kWh
1	Total	532511
2	Maximum	49157
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4	Average	44376



CHAPTER III CARBON FOOTPRINTING

A Carbon Foot print is defined as the Total Greenhouse Gas emissions, emitted due to various activities.

In this we compute the emissions of Carbon-Di-Oxide, by usage of the various forms of Energy used by the College for performing its day to day activities. The College uses Electrical Energy for various Electrical gadgets.

Basis for computation of CO₂ Emissions:

- 1 Unit (kWh) of Electrical Energy releases 0.8 Kg of CO₂ into atmosphere

Table No 4: Month wise CO₂ Emissions:

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Chart No 2: Representation of Month wise CO₂ Emissions:

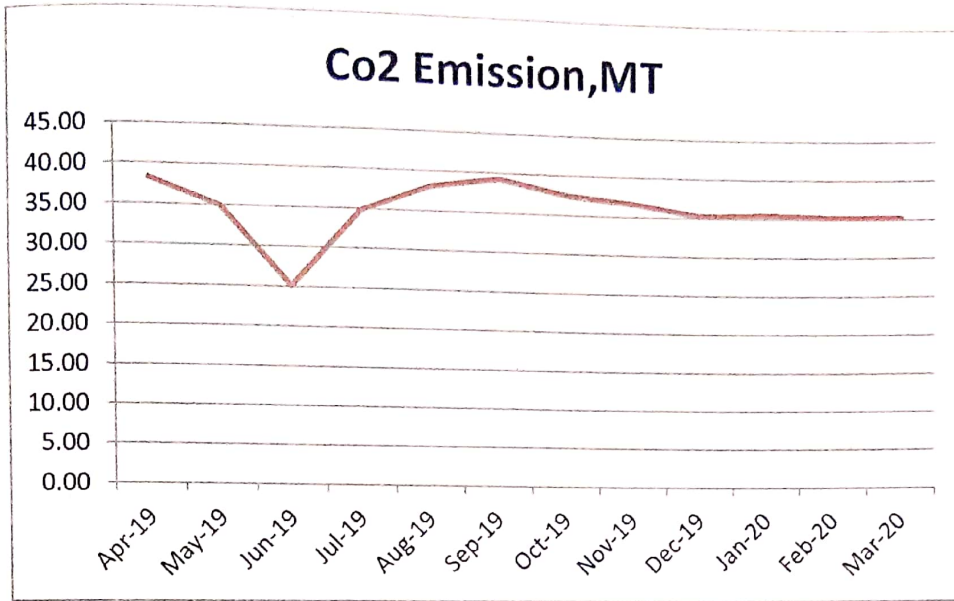


Table No 5: Various Important Parameters:

No	Parameter/ Value	Energy Consumed, kWh	CO ₂ Emissions, MT
1	Total	532511	426.01
2	Maximum	49157	39.33
3	Minimum	31331	25.06
4	Average	44376	35.50

CHAPTER IV

STUDY OF USAGE OF RENEWABLE ENERGY

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

Photograph of Solar Thermal Water Heating System:

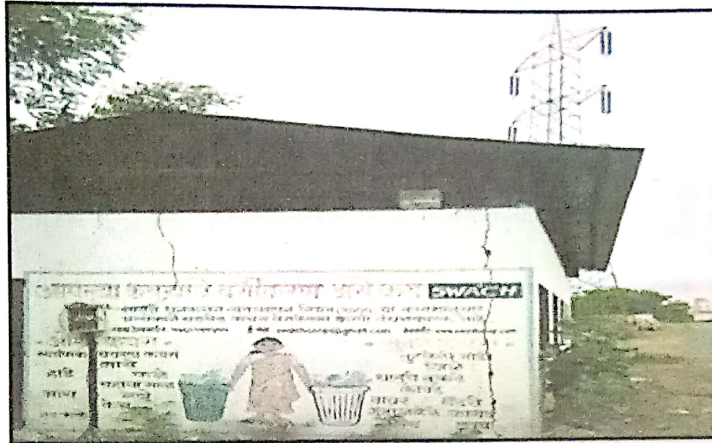


CHAPTER V STUDY OF WASTE MANAGEMENT

5.1 Solid Waste Management:

The Dry recyclable Waste & Wet Waste are collected on daily basis, and further given to Authorized Waste Collector for further disposal/Recycling.

Photograph of Garbage Segregation Shed:



5.2 Liquid Waste Management:

The College has installed a 275 KLPD Capacity Sewage Treatment Plant, to handle the human waste generated in the College.

Photograph of Sewage Treatment Plant:



5.3 E Waste Management: The E Waste generated is handed over to Authorized Agency.

CHAPTER VI STUDY OF RAIN WATER MANAGEMENT

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

Photograph of Rain Water Harvesting Pipe from Terrace:



Rain Water
carrying Pipe

CHAPTER VII

STUDY OF GREEN & SUSTAINABLE PRACTICES

7.1 Pedestrian Friendly Roads:

The College has well maintained internal roads to facilitate the easy movement of the students within the campus.

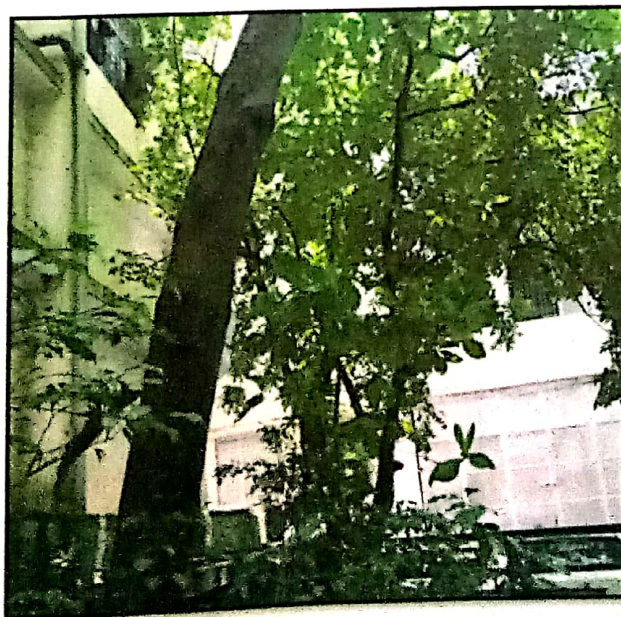
Photograph of Internal Road inside the College Campus:



7.2 Green Landscaping with Trees and Plants:

The College has maintained plantation in the campus.

Photograph of Garden in the College campus:



7.3 Provision of Ramp for Divyangajan:

The College has made provision of Ramp for Divyangajan.

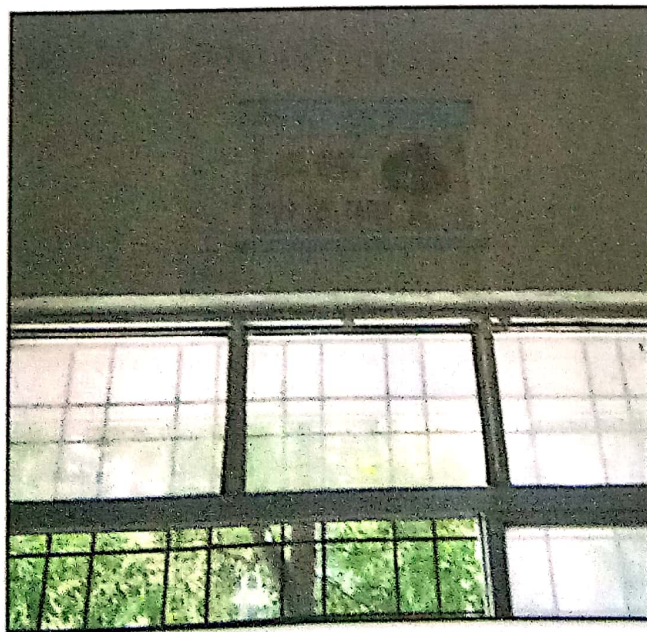
Photograph of Ramp:



7.4 Creation of Awareness about Resource Conservation:

In order to create awareness about Resource Conservation, the College has displayed posters on Resource Conservation.

Photograph of Poster on Resource Conservation:



7.5 Cleanliness Drive during Wari Procession:

Under National Service Scheme, Cleanliness Drive was conducted at the Vithoba Mandir in Pune during the Wari procession.

Photograph of Cleanliness Drive:



7.6 Tree Plantation Drive:

Under the National Service Scheme, Tree Plantation was organized in association of Savitribai Phule University on 23/6/2019.

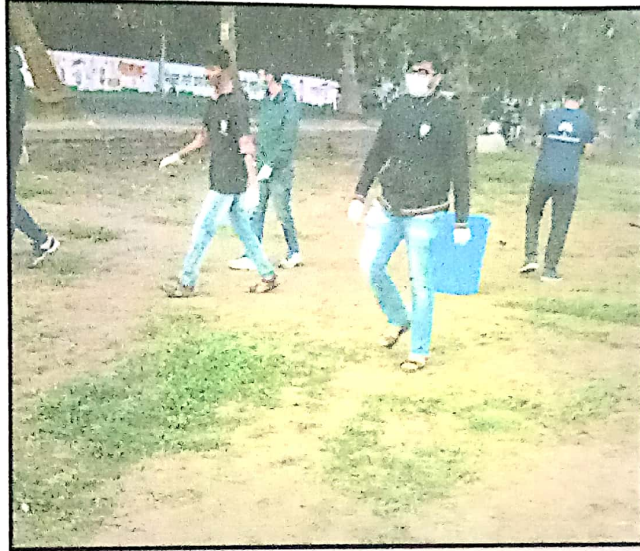
Photograph of Tree Plantation Event:



7.7 Cleanliness Drive at River:

Under National Service Scheme, Cleanliness Drive was conducted at the Mutha River near the Omkareshwar Temple in Pune.

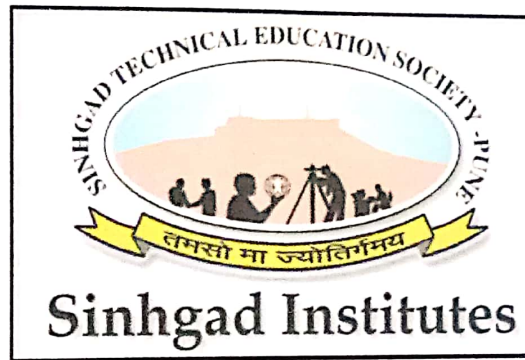
Photograph of Cleanliness Drive at Mutha River:



ENVIRONMENTAL AUDIT REPORT

of

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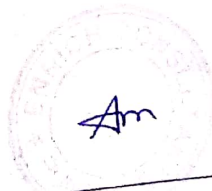


Year: 2019-20

Prepared by

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Maharashtra Energy Development Agency

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- MEDA reserves the right to visit the firm at any time without giving any prior information and canceling the registration, if the information is found incorrect.
- This empanelment is valid till **31st March 2021** 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.


(Smita Kudarikar)
General Manager (EC)

Enrich Consultants

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

Ref: EC/SKNCOE/19-20/03

Date: 12/7/2020

CERTIFICATE

This is to certify that we have conducted Environmental Audit at NBN Sinhgad School of Engineering, S. No. 10/1, Ambegaon (Bk.), Pune 411 041 in the year 2019-20.

The College has already adopted Environment Friendly practices like:

- Usage of Energy Efficient LED Fittings
- Installation of Solar Thermal Water Heating System
- Segregation of Waste at source
- Installation of 275 KLPD Sewage Treatment Plant
- Installation of Rain Water Management Project
- Tree Plantation in the campus

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

For Enrich Consultants,



A Y Mehendale,
Certified Energy Auditor
EA-8192

INDEX

No	Particulars	Page No
I	Acknowledgement	5
II	Executive Summary	6
III	Abbreviations	8
1	Introduction	9
2	Study of Resource Consumption & CO ₂ Emission	11
3	Study of CO ₂ Emission Reduction	13
4	Study of Waste Management	14
5	Study of Rain Water Management	15
6	Study of Environment Friendly Initiatives	16

ACKNOWLEDGEMENT

We at Enrich Consultants, Pune, express our sincere gratitude to the management of NBN Sinhgad School of Engineering, Ambegaon (Bk.), Pune, for awarding us the assignment of Environmental Audit of their Vadgaon Campus for the Year: 19-20

We are thankful to the Head of Departments & staff members for helping us during the field study.

EXECUTIVE SUMMARY

1. NBN Sinhgad School of Engineering, Ambegaon (Bk.) Pune consumes Energy in the form of Electrical Energy used for various gadgets, Office & other facilities.

2. Pollution caused due to College 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. Present Energy Consumption & CO₂ Emission:

No	Parameter/ Value	Energy Consumed, kWh	CO ₂ Emissions, MT
1	Total	532511	426.01
2	Maximum	49157	39.33
3	Minimum	31331	25.06
4	Average	44376	35.50

4. Usage of Renewable Energy & CO₂ Emission Reduction:

The College has installed Solar Thermal Water Heating System at the Hostel Blocks. The College has yet to install the Roof Top Solar PV Plant.

5. Waste Management:

5.1 Solid Waste Management:

The Dry and Wet waste is segregated at the source and is handed over to Authorized Agency for further disposal/recycling.

5.2 Liquid Waste Management:

The College has installed 275 KLPD Sewage Treatment Plant. The treated Water is used for Gardening purpose.

5.3 E Waste Management:

The E Waste generated is handed over to Authorized Agency for further disposal.

6. Rain Water Management:

The Rain water collected is used to increase the underground Water table.

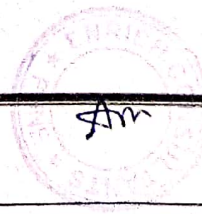
7. Eco Friendly Initiatives:

- Internal tree plantation in the campus

- Tree Plantation and Cleanliness Drive events outside the campus
- Creation of awareness on Resource Conservation by Display of Posters

8. Assumption:

1. 1 kWh of Electrical Energy releases 0.8 Kg of CO₂ into atmosphere



ABBREVIATIONS

LED	: Light Emitting Diode
kWh	: kilo-Watt Hour
MT	: Metric Ton
CO ₂	: Carbon Di Oxide
LPD	: Liters Per Day
NSS	: National Service Scheme

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 compiled 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. Table No 1: Relevant Environmental Laws in India:

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

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

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 Institute)
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:

1. To study Consumption of Resources and CO₂ Emission
2. To Study CO₂ Emission reduction
3. To Study Waste Management Practices
4. To Study Rain Water Management
5. To study Environment Friendly Initiatives

1.3 Table No 4: General Details of College:

No	Head	Particulars
1	Name of Institution	NBN Sinhgad School of Engineering
2	Address	S. No. 10/1, Ambegaon (Bk.), Pune 411 041
3	Affiliation	Savitribai Phule Pune University

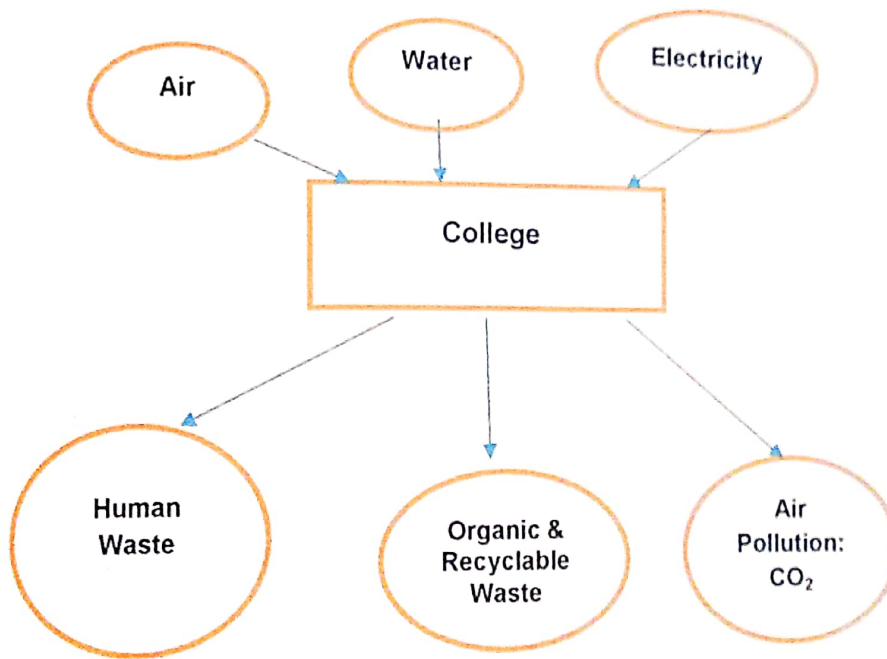
CHAPTER-II STUDY OF CONSUMPTION OF RESOURCES & CO₂ EMISSION

2.1 The Institute consumes following Natural/derived Resources:

1. Air
2. Water
3. Electrical Energy

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

2.2 Chart No: 1: Representation of College as System:



We compute the Generation of CO₂ on account of consumption of Electrical Energy as under.

Table No 5: To study Energy Consumption and CO₂ Emission: 19-20:

No	Month	Energy Consumed, kWh	CO ₂ Emissions, MT
1	Apr-19	47780	38.22
2	May-19	43658	34.93
3	Jun-19	31331	25.06
4	Jul-19	43556	34.84
5	Aug-19	47661	38.13
6	Sep-19	49157	39.33

7	Oct-19	46886	37.51
8	Nov-19	45812	36.65
9	Dec-19	44144	35.32
10	Jan-20	44378	35.50
11	Feb-20	44075	35.26
12	Mar-20	44076	35.26
13	Total	532511	426.01
14	Maximum	49157	39.33
15	Minimum	31331	25.06
16	Average	44376	35.50

Chart No 2: To study the variation in CO₂ Emissions, MT:

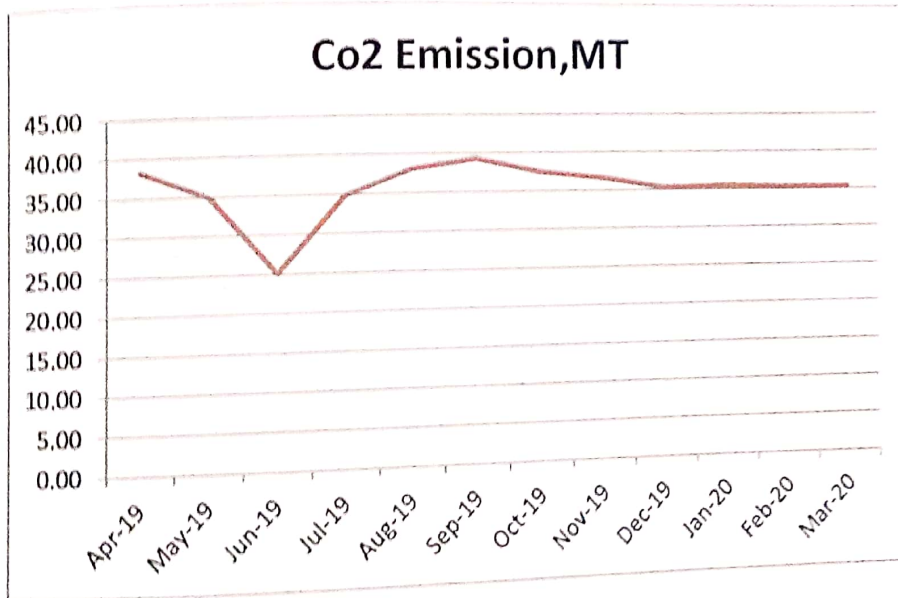


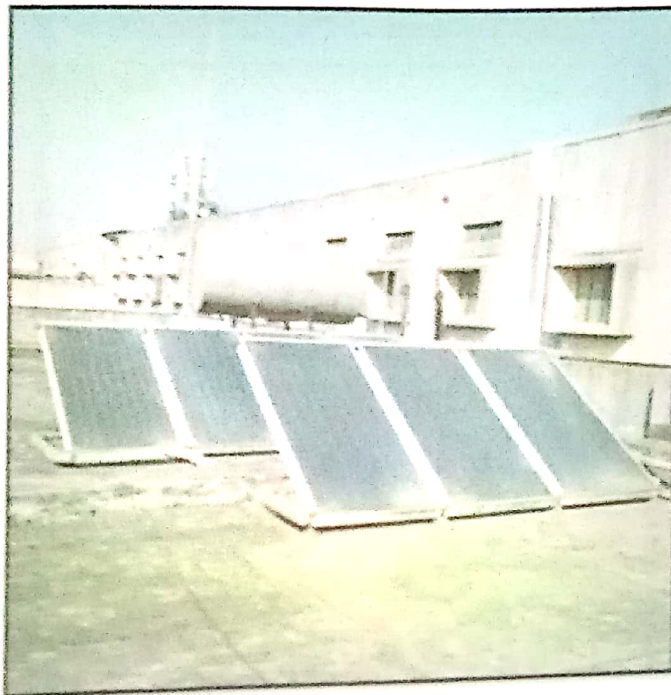
Table No 6: Various Important Parameters:

No	Parameter/ Value	Energy Consumed, kWh	CO ₂ Emissions, MT
1	Total	532511	426.01
2	Maximum	49157	39.33
3	Minimum	31331	25.06
4	Average	44376	35.50

CHAPTER III STUDY OF CO₂ EMISSION REDUCTION

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

Photograph of Solar Thermal Water Heating System:



CHAPTER IV STUDY OF WASTE MANAGEMENT

4.1 Solid Waste Management:

The Dry recyclable Waste & Wet Waste are collected on daily basis, and further given to Authorized Waste Collector for further disposal/Recycling.

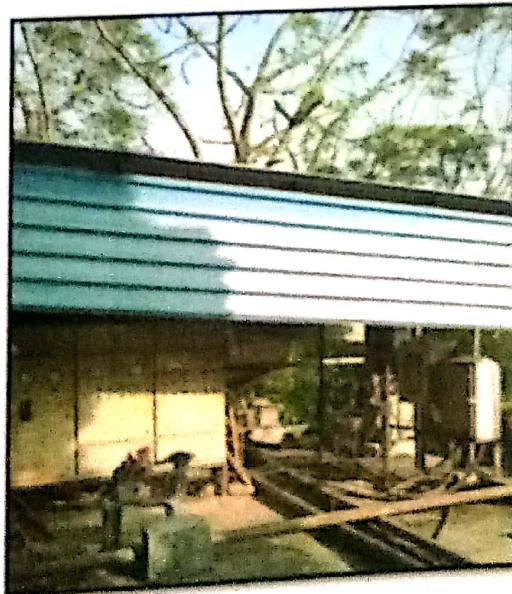
Photograph of Garbage Segregation Shed:



4.2 Liquid Waste Management:

The College has installed a 275 KLPD Capacity Sewage Treatment Plant, to handle the human waste generated in the College.

Photograph of Sewage Treatment Plant:



4.3 E-Waste Management: The E Waste generated is handed over to Authorized Agency.

CHAPTER V STUDY OF RAIN WATER MANAGEMENT

The water falling on terrace is used to increase the underground water table.
Photograph of Rain Water Harvesting Pipe from Terrace:

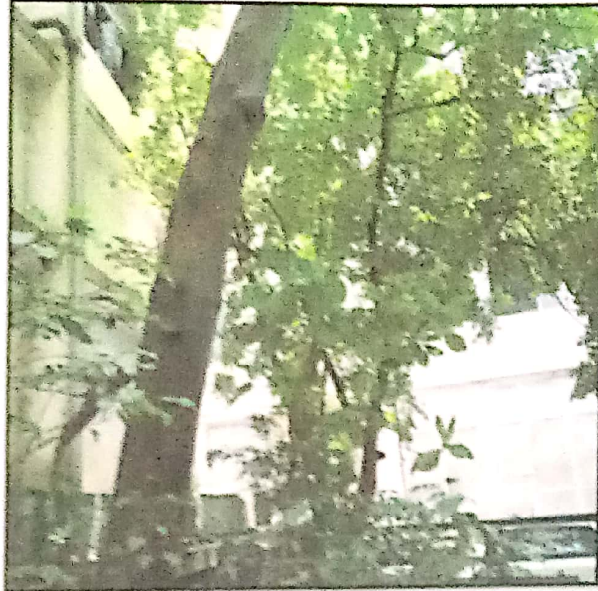


Rain Water
carrying Pipe

CHAPTER VI STUDY OF ENVIRONMENT FRIENDLY INITIATIVES

6.1 Internal Tree Plantation:

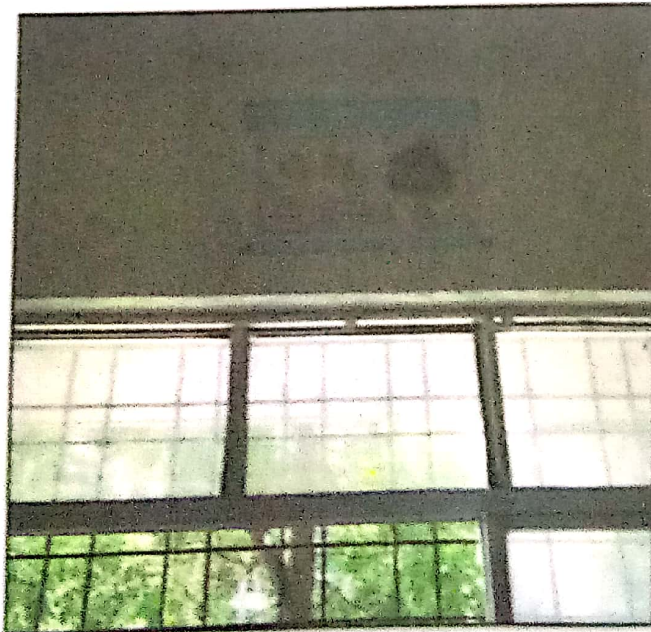
The College has maintained plantation in the campus.
Photograph of Garden in the College campus:



6.2 Creation of Awareness among Stake Holders:

The College has taken up various measures to create Awareness for conserving the Natural resources, Reducing the Wastage and Recycling & Reuse.

Photograph of Display board for Importance of Resource Conservation:



6.3 Cleanliness Drive during Wari Procession:

Under National Service Scheme, Cleanliness Drive was conducted at the Vithoba Mandir in Pune during the Wari procession.

Photograph of Cleanliness Drive:



6.4 Tree Plantation Drive:

Under the National Service Scheme, Tree Plantation was organized in association of Savitribai Phule University on 23/6/2019.

Photograph of Tree Plantation Event:



6.5 Cleanliness Drive at River:

Under National Service Scheme, Cleanliness Drive was conducted at the Mutha River near the Omkareshwar Temple in Pune.

Photograph of Cleanliness Drive at Mutha River:

