GREEN AUDIT REPORT

of

SHREE L. R. TIWARI DEGREE COLLEGE OF ARTS, COMMERCE AND SCIENCE,

Shree L. R. Tiwari Educational Campus, Mira Road (East) Thane 401 107

PIONEERING EDUCATION
SINCE 1992

Year: 2020-21

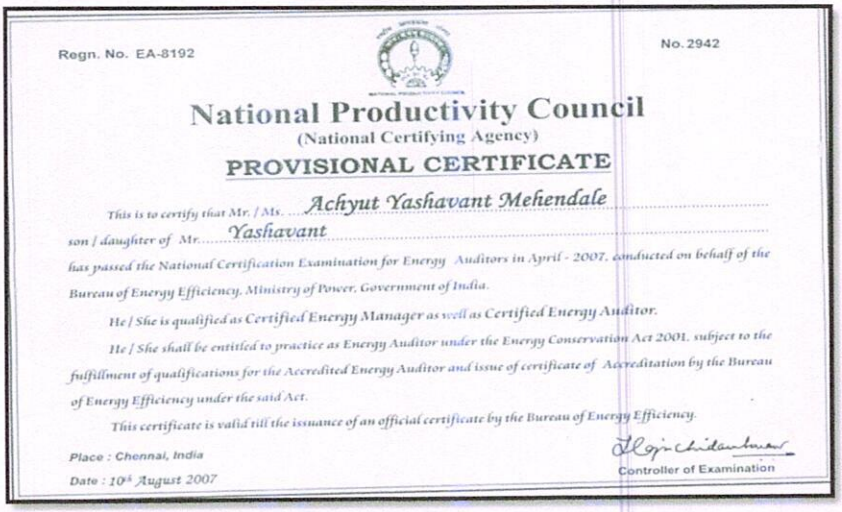
Prepared by:

ENRICH CONSULTANTS

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

ENRICH CONSULTANTS PUNE

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.

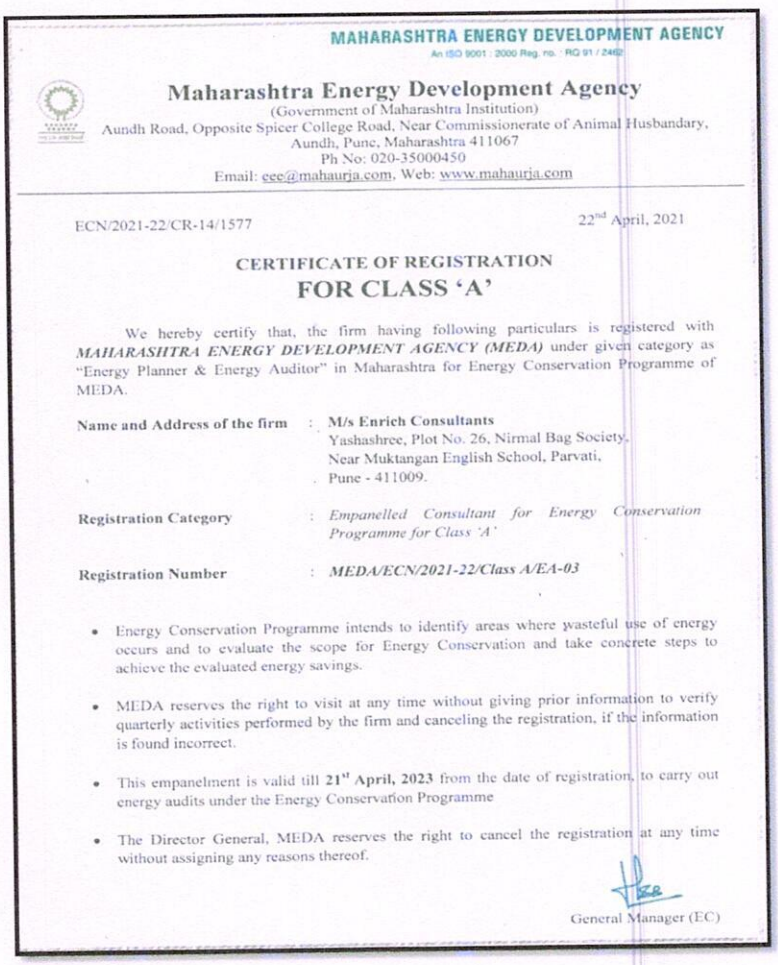
He / She shall be entitled to practice as Energy Auditor under the Energy Conservation Act 2001, subject to the fulfillment of qualifications for the Accredited Energy Auditor and issue of certificate of Accreditation by the Bureau of Energy Efficiency under the said Act.

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

BEE ENERGY AUDITOR CERTIFICATE



MAHARASHTRA ENERGY DEVELOPMENT AGENCY
An ISO 9001 : 2000 Reg. no. : RQ 91 / 2462

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/2021-22/CR-14/1577 22nd April, 2021

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

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

Registration Number : *MEDA/ECN/2021-22/Class A/EA-03*

- 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 **21st April, 2023** 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)

MEDA EMPANELMENT CERTIFICATE

ENRICH CONSULTANTS PUNE

ENRICH CONSULTANTS

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

Ref: EC/SLRTDC/20-21/02

Date: 20/8/2021

CERTIFICATE

This is to certify that we have conducted Green Audit at Shree L. R. Tiwari Degree College of Arts, Commerce and Science, Shree L. R. Tiwari Educational Campus, Mira Road (East) Thane 401 107, in the Academic year 2020-21.

The College has adopted following Green Practices:

- Usage of Energy Efficient LED Light Fitting
- Maximum Usage of Day Lighting
- Provision of Waste Collection Bins
- Provision of Bio Composting Pit
- Implementation of Rain Water Management Project
- Good Internal Road
- Lawn in the campus
- Provision of Ramp for Divyangajan
- Creation of Awareness of Plastic Free 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 Enrich Consultants,

A Y Mehendale,
Certified Energy Auditor,
EA-8192

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ACKNOWLEDGEMENT

We Enrich Consultants, Pune, express our sincere gratitude to the management of Shree L. R. Tiwari Degree College of Arts, Commerce and Science, Shree L. R. Tiwari Educational Campus, Mira Road (East) Thane 401 107, for awarding us the assignment of Green Audit of their Campus for the Year: 2020-21.

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

EXECUTIVE SUMMARY

1. Shree L. R. Tiwari Degree College of Arts, Commerce and Science), Mira Road, consumes Energy in the form of **Electrical Energy;** used for various Electrical Equipment.

2. Present Energy Consumption & CO_2 Emission:

No	Parameter/ Value	Energy Consumed, kWh	CO_2 Emissions, MT
1	Total	20147	18.13
2	Maximum	3375	3.04
3	Minimum	1185	1.07
4	Average	1678.92	1.51

3. Usage of Renewable Energy:

- The College has yet to install Roof Top Solar PV Plant.

4. Waste Management:

4.1 Segregation of Waste at Source:

The Dry and Wet waste is segregated at the source. Waste collection Bins are kept at various points.

5. Rain Water Management:

The Rain water falling on terrace is collected through Pipes and is used to increase the underground water table.

6. 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 by Display of Posters on Plastic Free Campus

7. Assumptions:

1. Energy Consumption is computed based on Load Utilization Factor
2. **1 kWh** of Electrical Energy releases **0.9 Kg** of CO_2 into atmosphere

8. Reference:

- For CO_2 Emission Computation: www.tatapower.com

ABBREVIATIONS

Kg	:	Kilo Gram
MT	:	Metric Ton
kWh	:	kilo-Watt Hour
LPD	:	Liters per Day
LED	:	Light Emitting Diode

CHAPTER-I
INTRODUCTION

1.1 Objectives:

1. To study present Energy Consumption
2. To compute CO_2 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 College	Shree L. R. Tiwari Degree College (Arts, Commerce and Science
2	Address	Shree L. R. Tiwari Educational Campus, Mira Road (East) Thane 401 107
3	Affiliation	University of Mumbai

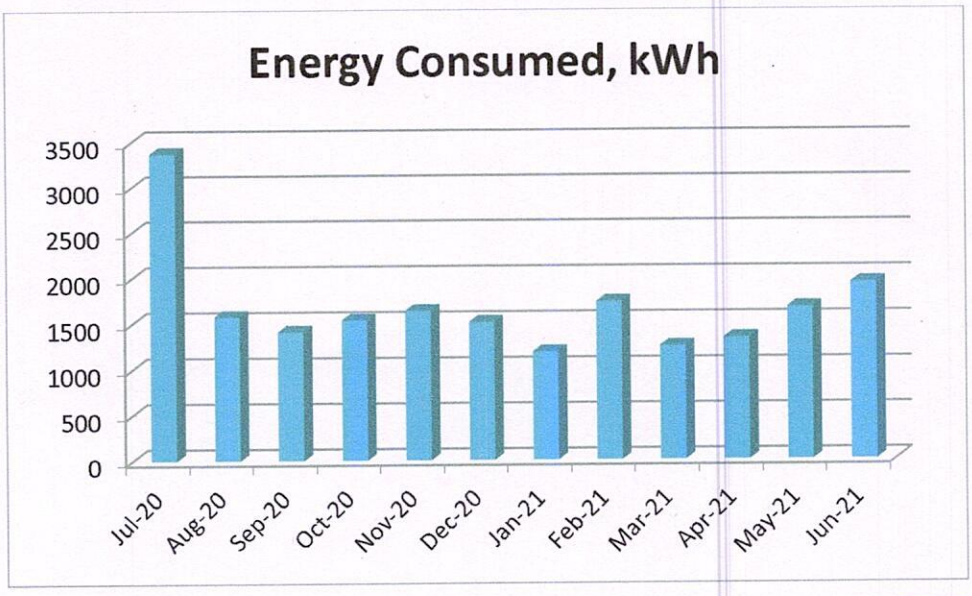
CHAPTER-II
STUDY OF PRESENT ENERGY CONSUMPTION

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

Table No 2: Electrical Energy Consumption Analysis: 2020-21:

No	Month	Energy Consumed, kWh
1	Jul-20	3375
2	Aug-20	1575
3	Sep-20	1412
4	Oct-20	1536
5	Nov-20	1637
6	Dec-20	1512
7	Jan-21	1185
8	Feb-21	1731
9	Mar-21	1245
10	Apr-21	1336
11	May-21	1667
12	Jun-21	1936
13	Total	20147
14	Maximum	3375
15	Minimum	1185
16	Average	1678.92

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



CHAPTER III
STUDY OF CARBON FOOT PRINTING

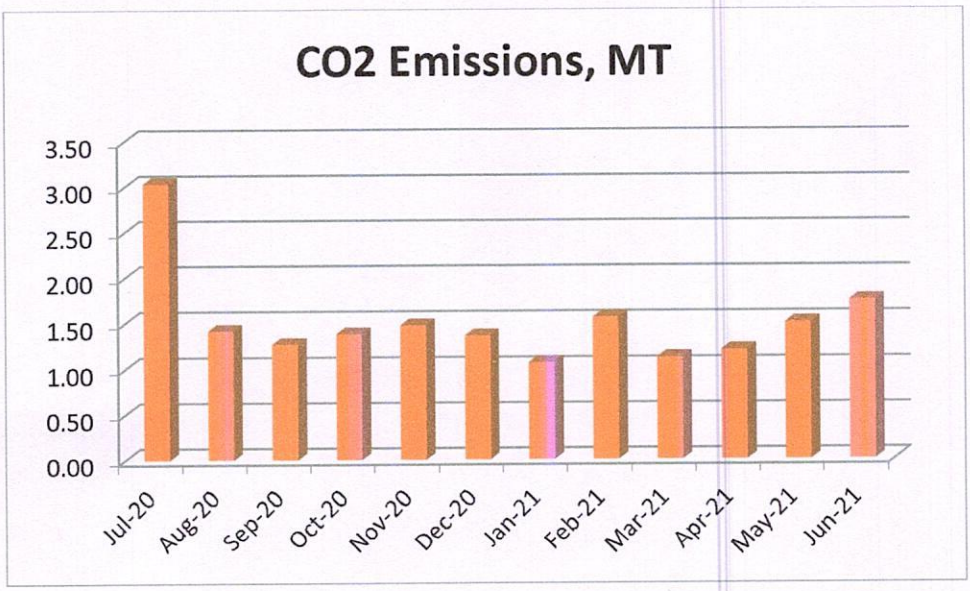
A Carbon Foot print is defined as the Total Greenhouse Gas emissions, emitted due to various activities. **Basis for computation of CO_2 Emissions:**

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

Table No 3: Month wise CO_2 Emissions:

No	Month	Energy Consumed, kWh	CO_2 Emissions, MT
1	Jul-20	3375	3.04
2	Aug-20	1575	1.42
3	Sep-20	1412	1.27
4	Oct-20	1536	1.38
5	Nov-20	1637	1.47
6	Dec-20	1512	1.36
7	Jan-21	1185	1.07
8	Feb-21	1731	1.56
9	Mar-21	1245	1.12
10	Apr-21	1336	1.20
11	May-21	1667	1.50
12	Jun-21	1936	1.74
13	Total	20147	18.13
14	Maximum	3375	3.04
15	Minimum	1185	1.07
16	Average	1678.92	1.51

Chart No 2: Representation of Month wise CO_2 Emissions:



CHAPTER IV
STUDY OF USAGE OF RENEWABLE ENERGY

The College has yet to install Roof Top Solar PV Plant.

CHAPTER V
STUDY OF WASTE MANAGEMENT

5.1 Segregation of Waste at Source:

The Dry and Wet waste is segregated at the source. Waste collection Bins are kept at various points.

Photograph of Waste Collection Bin:

CHAPTER-VI
STUDY OF RAIN WATER MANAGEMENT

The Rain Water falling on the terrace is used to increase the underground Water Table.

Photograph of Rain Water Collecting Pipe:

CHAPTER-VII
STUDY OF GREEN & SUSTAINABLE PRACTICES

7.1 Pedestrian Friendly Road:

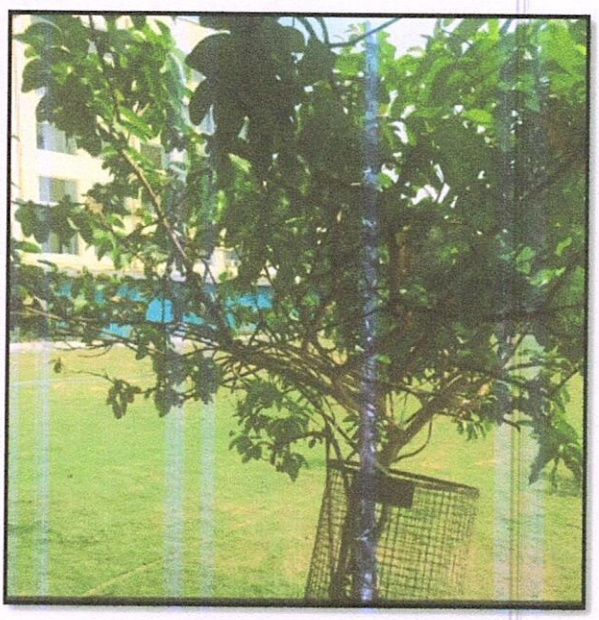
The College has well maintained internal road to facilitate the easy movement of the students within the campus.

Photograph of Internal Road inside the College Campus:

7.2 Green Landscaping with Trees and Plants:

The College has maintained Lawn and Tree plantation in the campus.

Photograph of Tree Plantation in the College campus:



7.3 Creation of Awareness about Plastic Free Campus:

The College has displayed posters emphasizing on importance of Not Using Plastic.

Photograph of Poster on Plastic Free Campus: