ST PHILOMENA COLLEGE

Re-accredited by NAAC at "A" Grade
Affiliated to Mangalore University
Managed by Catholic Board of Education,
Mangalore Philonagar, Darbe - 574202,
Puttur, D.K. Karnataka.
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ENERGY AUDIT REPORT-2020-21

By,

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1. Introduction:

St Philomena College was founded in 1958 by Msgr Antony Patrao, a missionary, who conscientiously believed that education was the best means of empowerment. His conviction that the religious, spiritual, social and economic interest of the students could be best served through education made this region an educational hub. Even in the nascent stages of its growth the College showed all the signs of becoming a centre of excellence. A fully fledged centre of excellence is yet to be realized, but efforts towards this end have not ceased.

With an enviable record of growth in student enrollment, physical infrastructure and student achievements, the Institution offered itself for accreditation in 2004 to begin with and in 2010 for the II cycle. To justify an excellent social accreditation, the NAAC accredited the Institution at 'A' grade with a CGPA of 3.19 in the III cycle in the year 2016. Efforts are not spared to consolidate the features and functions of the Institution by the Catholic Board of Education, Diocese of Mangalore, which is the top management. The CBE has under its care 11 Degree colleges, 16 Pre-university colleges, 66 high schools, 165 primary schools and 1 technical institute. Most Rev Peter Paulo Saldhana, the Bishop, Diocese of Mangalore is the President of CBE.

Affiliated to Mangalore University and recognized by the UGC under 2(f) and 12B, the Institution does attempt to treat the primary stake holders in six UG programs and six PG programs to a rewarding educational experience. Fulfilling most of recommendations of the previous Peer Team and which an array of post accreditation initiatives the Institution offers itself for the IV cycle of accreditation in the academic year 2020-21.

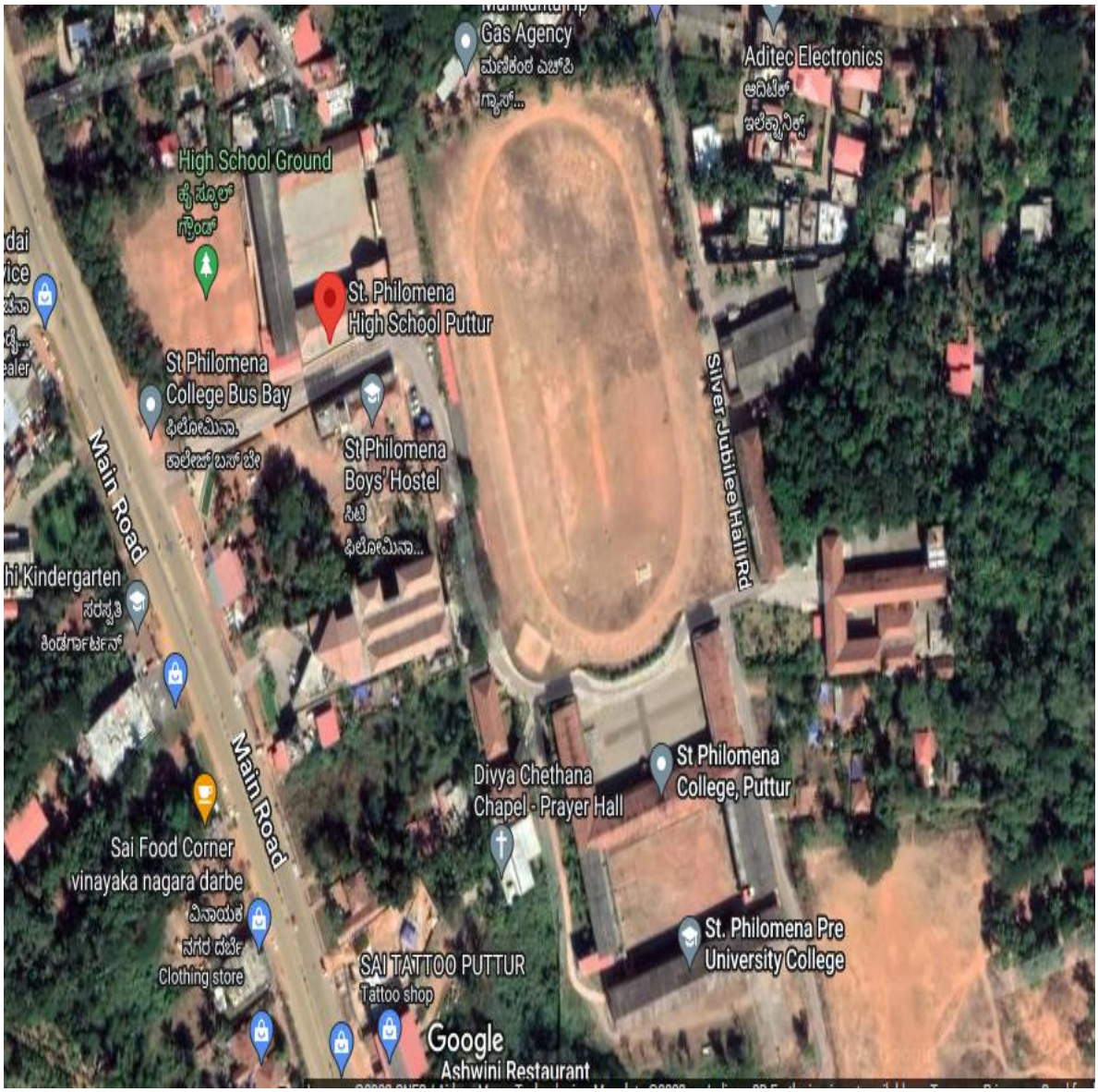
The environmental issue has become a world-wide concern in the last few decades being the focus of discussions in a variety of forums both at national and international levels. Because environmental problems are rooted in economic and social policies, they occur at all levels from local to global, and success requires action by many players over a long period of time. The activities undertaken by the colleges can create a variety of environmental impacts. Educational institutions are in a unique position to provide environmentally sustainable solutions. St Philomena College expresses its commitment to sustainability in many ways. It has undertaken a number of positive steps to reduce its environmental impacts.

The environmental audit of St Philomena College is meant to be a quantitative and qualitative way to record and present the activities of the Institution and its stakeholders. In effect, encourage & promote more sustainable way of living.

2. Location:

The St Philomena College Campus located at Puttur, which happens to be the second biggest town in South Canara District. A green campus with calm and serene atmosphere, inspiring the students to achieve their goals and gain new heights in their lives. The campus is located about 2 KMs from the heart of the town.

Location	Rural
Campus area in sq. mts.	91,054.26
Built up area in sq. mts	8700.74



3. Vision

To be a premier Institution for Higher Education, constantly in service to the society in the field of education and welfare.

4. Mission

To educate and train the young knowledge seekers for their holistic development to make effective contribution to the society.

5. Objectives

- To provide opportunities for Higher Education to the young knowledge seekers.
- To prepare the students optimize the various social resources for sustainable growth and development.
- To sensitise the students about the social needs and problems.
- To provide guidance and support for the all-round development of the personality of students.
- To help the students accomplish their career opportunities.
- To assess Environmental Performance of the Institution.
- To ascertain whether the Institution complies with the statutory requirements.
- To assess whether the activities are economical, efficient and effective.
- To Improve environmental standards.
- To encourage Reduction, Recycling and Reuse practices.
- Curriculum enrichment through practical experience.
- To enhance Institutional Profile through Demonstration of Commitment towards Environment.
- Developing an environmental ethic and value systems among stakeholders

6. OBJECTIVES OF AUDIT:

- To promote the Energy management system in the campus.
- To reduce Energy consumption and ensure the optimum utilization of resources.

7. Audit Methodology

The audit is carried out in following steps.

- Identification of Activities that have bearing on Environment.
- Identification of resources and utilities required for the Institute.
- Identify sources of pollution & assess the efficiency of the control methods.
- Identify & suggest corrective & preventive actions, if any.
- Conclusions from the audit

8. The areas covered in this audit

The Institute has added many educational activities by introducing new courses and schools over the period. There are 11 units which underwent audit as per the list below

- St Philomena College
- St Philomena Pre-University College
- Centre for P G Studies and Research
- St Philomena High School
- St Philomena English Medium School
- Karnataka State Open University Study Centre
- St Philomena College Hostel for Men
- St Philomena College Hostel for Women
- St Philomena High School Boys Hostel
- Silver Jubilee Memorial Hall
- St Philomena College Canteen

All these units were subjected to audit with respect to following criteria..

- Geographical Location with green campus concept
- Floral & Faunal diversity
- Water & Wastewater Management
- Waste Management

- Energy consumption & Conservation
- Biodiversity (Floral and Faunal Diversity)
- Education & Awareness Training

9. Energy Audit:

Energy Audit plays significant role in taking decision in Energy management system and also give clear picture about energy usage in the campus. It attempts to balance the total energy inputs with its use, and serves to identify all the energy streams in a facility.

1. Source of energy: Main energy sources in the campus are,

1.MESCOM

2. Diesel Generators

3. Solar Energy

List of Diesel Generators Installed in the Campus

Sl.no	Capacity	Heights of Chimney
1	64 KVA	6 ft
2	35 KVA	4 ft
3	35 KVA	4 ft

Total Energy Consumption

Description	Monthly Consumption in kwh
MESCOM	7750 units
DIESEL GENERATORS	140 Ltrs

10. Listing present energy conservation plans

- The institute is concentrating to reduce energy consumption, increase efficiency, use more renewable energy sources like solar energy.
- Existing energy consuming devices like tube lights are replaced by LED energy saving models.
- Students are oriented not to waste the electric energy.
- While purchasing electronic instruments, less energy consumes is considered as major parameter.
- Service and Maintenance of all equipment are properly planned and monitored.

1. USE OF LED BULBS AND LIGHTS IN FUNCTIONING AREAS

The college augments its reliance on green energy by using a greater number of LEDs. The administrative office, Principal's chamber, Library, laboratories, corridors, etc. are illuminated by LED lights to minimize energy consumption as well as carbon footprint.

A)	Principals Chamber	15WT GM Brand 08 No. Led lights used in principal chamber to cover the floor space of 12×13=312 sq. ft.
B)	Administrative Office	UG: 15WT GM Brand 03 No. LED lights used in administrative office to cover the floor space of 24×26=624 sq. ft.
		PG: 15WT GM Brand 04 No. LED lights used in Administrative office to cover the floor space of 24×26=624 sq. ft.
C)	Passage	06 bulbs and 06 tube lights will cover the entire passage area of UG Blocks and 15 LED Bulbs entire passage area of PG block
D)	Laboratories	10 LED Tubes covers the total laboratory area in different laboratories of UG and PG Block
E)	Library	15 LED tubes and 10 LED bulbs cover the premises of library.
F)	Hostels	LED Bulbs and 142 LED bulbs cover the hostel

2. DRT MONITORS REPLACED BY LCD/LED MONITOR

The college upgraded Monitors /TVs of the laboratories, Subject Departments, Library and Administrative office from DRT to LCD / LED Monitor.

LOCATION	In No's
UG COMPUTER LABORATOY	100
PG COMPUTER LABORATORY	38
SUBJECT DEPARTMENT-UG	16
SUBJECT DEPARTMENT-PG	07
LIBRARY (UG& PG)	12
DIGITAL LIBRARY (UG& PG)	09
ADMINISTRATIVE OFFICE (UG& PG)	11
HOSTELS	04

3.SESNOR BASED OUTDOOR WALL LIGHT

The College installed sensor based outdoor wall light for the efficient use of energy at the boy hostel which face the main entry / exit point of the college, which uses 20 WT power consumption.

4.POWER SAVING MODE

The head of the institution instructs the concerned to enable power saving mode in their concerned departments and laboratory systems (PCs) and it is managed by the System Administrator of the College.

5. AUTO ON OFF LABORATORY EQUIPMENTS:

Majority of the laboratories are equipped with power saving apparatus.

6. POWER SAVING REFRIGERATOR:

11 refrigerators used in college passage, laboratories and administrative offices are enabled with 5star power saving mode and has the facility of auto on off whenever it is needed.

11. Resource Conservation - Present Practices & Proposed Plans

a. Water Conservation

The college is situated in Puttur city that gets heavy rain during the monsoon period every year. In order to conserve this rain water the college roof top and terrace areas have been connected to pipes that carry the accumulated water down to the ground level. This water is allowed to seep into the soil so as to raise the ground water table.

- Rain water harvesting is undertaken on the campus.
- Rain water falling on a roof of 10,000 sq. ft. is collected and stored in a facility with a capacity of 20,000 liters.
- The water collected is used in the rest rooms and wash rooms which meets the water requirements in that area for about four months.
- The practice of rain water harvesting has helped the students to internalize the need for economizing on the use of a very precious natural resource.
- It has contributed to strengthen the surface water as water from wells is not drawn for a definite period; instead, surplus rain water is fed into the source.

- The excess water collected by harvesting is also fed to the tube-wells thereby strengthening the ground water table.
- The added advantage of the system is that water is not lifted from the tube-wells which will help save electricity.
- In a way it is a method of energy conservation. Besides, all the students are educated about the methods and importance of rain water harvesting.

Water Collection Tank

RAIN WATER HARVESTING

WATER TANK

Bore well recharge

A bore well is present in front of Post-Graduation Centre. It is enclosed with iron lid as a protective measure. A water pump is installed to the bore well. The bore well water is used in the Post-Graduation Centre for daily commutes in wash rooms and waters the green spaces of the campus. This has greatly reduced the consumption of Municipal water for such purposes.

Bore well is recharged during monsoon season through rain water of the college roof top and terrace areas, that have been connected to pipes and carry the accumulated water down to the ground level of bore well. These water steps into the ground and raises the level of the ground water table.

Maintenance of water bodies and distribution system in the campus

The ground water and municipal water is pumped into storage tanks located at different places in the campus. There are nine overhead storage tanks in the campus. The water is distributed through well laid pipe network. Drinking water after treating in RO plant is supplied through a separate set of distribution pipes and water for all other purpose is supplied through another set of distribution pipes. Entire distribution system is well supervised to ensure that there are no leakages and wastages of precious water through taps, joints, valves, etc. Waste usage of water is reduced using low pressure flushes. All the stakeholders of the college are well educated to use water economically and efficiently.

b. Energy Consumption & Conservation Plans

- Solar Water Heating (SWH) system has been installed in the hostels for men and women to make hot water available to the inmates.
- The management has planned to install solar panels on the College building, PG building, auditorium building and library building in a span of one or two years to generate power as a substitute for electricity.
- Solar panels are installed in the hostels of the campus for giving hot water facility to students.

  - 2500 LPD SWH stainless steel with EFEX coating framework type structure installed in Women's Hostel by replacing old one during the year with a cost of Rs 2,26,382.00 which can save the power up to 20,400 units per annum or approximately Rs. 1,10,000.00 worth of power cost.
  - 2000 LPD SWH TATA SOL SOLAR (12 PANEL) framework type structure installed Men's Hostel which can save the power up to 20,400 units per annum.

12.Conclusion

St Philomena College is more concerned about energy source depletion. In this regard college is more concentrating to reduce energy consumption, increase efficiency, and use more renewable energy sources like solar energy. Many other energy conservation plans like usage of LED bulbs, Sensor based wall lights, power saving mode, power saving equipments are in place and all these are executed and maintained in the campus. Institute is also creating awareness on how to use energy efficiently and economically in all students.

Audited by,

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