

St. Vincent Pallotti College , Raipur

Energy Audit Report 2018-19



By

A handwritten signature in black ink, appearing to read 'Manoj'.

Dr. Manoj Kumar Nigam
Professor, Dept. of Electrical Engineering
MATS University, Raipur



MATS UNIVERSITY



Date:

Energy Audit **Certificate**

This is to certify that the **St. Vincent Pallotti College, Raipur** has conducted 'Energy Audit' of session 2018-19 to assess the electrical consumption, use of renewable energy resources and various Environment Awareness Activities

The College has submitted necessary data and credentials for scrutiny. The activities and measures carried out by the college have been verified and were found to be satisfactory. The necessary feedback has been given and recommendations have been made to enhance the environmental efficiencies.

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Preface

Nature is very precious gift for all life forms. Disturbance in the nature causes environmental Problems increasing day by day due to development of urbanization and industrialization on earth. Unplanned utilization of resources planet facing tremendous pressure resulting temperature is increasing. Therefore, urgent need to planning to utilization of the resources in sustainable manner to protect nature. Sustainable development is becoming popular in the world for saving the earth. Utilizing resources in judiciously can save the earth's precious resources. Measurement of environmental components is the most effective step to conserve and protect natural resources.

Energy auditing as a part of Environmental auditing had begun to analyze the real energy saving contributions made by the Institution. Energy auditing involves on site visit, collection of samples, performing analyses, and report results to competent authorities. Academic institutions also can contribute to the preservation and conservation of resources within their premises.

Data collection for energy audit of the St Vincent Pallotti College, Raipur Campus was conducted by team for the period of November 2017 to December 2018.

We express our deep sense of gratitude to the director of the St. Vincent Pallotti College, Principal of the college for their support in preparation of the report.

This audit required to recognize the mainly energy proficient appliances. Besides, several each day processes concerning common appliances have been provided which facilitate sinking the energy expenditure. All data collected from each classroom, laboratory, every room. The work is completed by considering, how much tubes, fan, A.Cs, electronic instruments, etc in each room. How much was participation of each component in total electricity consumption

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Introduction:

In Present era planet is becoming warmer day by day due to environmental problems creating by human activities for development in terms of rapid urbanization, industrialization and development of science and technology. Quality of air, water and soil is continuously diminishing without recovery. There is urgent need to creating awareness for sustainable utilization of earth's precious resources. Measurement of environmental components is the most effective step to conserve and protect natural resources.

On this background it becomes essential to adopt the energy efficient system for the institute which will lead for sustainable development. Now the time has came to adopt new techniques like energy audit. Energy audit is a process of systematic identification, quantification, recording, reporting and analysis of electrical components of various establishments. It aims to analyze energy saving practices within and outside of the concerned sites, which will have an impact on the eco-friendly environment.

Energy audit can be a useful tool for a college to determine how and where they are using the most energy resources; the college can then consider how to implement changes and make savings. It can create health consciousness and promote environmental awareness, values and ethics. It provides staff and students better understanding of conservation of resources in the campus. The basic components in energy audit are energy conservation, use of renewable sources and minimizing the misuse of electricity. Finally, Energy audit is a requirement of NACC assessment to the Colleges and Universities.

ABOUT THE COLLEGE

St. Vincent Pallotti College is established in the year 1995 and administered by Vidya Protsahan Sangh, a charitable Society under article 30(1) of the Constitution of India, primarily meant for Christian minorities. The college is located in Kapa, about 2.5 Km. from Bus stand Pandari, Raipur. Degree courses in Commerce, BBA, Arts, Computer Science, Physical Education, BCA, Post Graduate courses in Commerce, English and PGDCA offered for mobility of the institution. There are around 1080 students, 34 teachers and 07 members of the non-teaching staff of the college extend. The dedication of the management and the community, combined with excellent

infrastructural and teaching facilities help maintain high Standards in curricular and co-curricular spheres of the institution.

Total Campus Area & College Building Spread Area

Campus Area	-----	17199m ²
Built up Area	-----	1773m ²
Tree Canopy	-----	5400m ²
Free Space	-----	10000m ²

Campus Infrastructure:

Seminar Halls The college boasts of a multi-facility, ventilated auditorium with a seating capacity of 300 chairs and parking space make it a converging point of academic and cultural activities.

Conference Rooms: There is one air conditioned conference room aimed at providing space for the policy making bodies of the college.

Library: The college library is fully computerized and digitalized with Catalogue facility and has a collection of over 14500 books, 154 encyclopedias and a subscription of about 31 periodicals and journals. Internet browsing is also available. Total seating capacity of the library is 64.

Computer Labs : There are two well-equipped computer labs associated with the Departments of Management, Computer Application.

Student Support Facilities Every department of the college has a departmental library which supplies books to the students. College office and library has photocopiers and multi-equipement open gym has been installed in the campus.

Canteen: The college canteen caters to the nutritional needs of the staff and students at subsidized rates. The canteen functions from 9am. To 2pm.

Hostel : The girl students are provided neat and safe residential accommodation at two well-equipped convent hostels in the vicinity of the college.

Sports and Games facilities : The College has a Basket Ball Court, Volley Ball Court, Shuttle Badminton Court, Football Field, Fitness Centre, Table Tennis, Cricket Pitch etc.

Objective of the Audit

The main objectives of carrying out Energy Audit of the college campus are:

- i. Assessing present pattern of energy consumption in the institution.
- ii. Highlighting wastage in major areas.
- iii. Fixing of energy saving potential targets for the institution.
- iv. Implementation of measures of energy conservation and realisation of savings among staff and the students.

Methodology

The purpose of the energy audit of College is to ensure that the practices followed in the campus are in accordance with the Environmental Policy adopted at the institution. The methodology include the preparation physical inspection of the campus, observation and review of the documentation, interviewing with students and key persons and data analysis, measurements and recommendations.

Constitution of Energy Audit Team:

Fr. Shanti Prakash Panna :	Director
Dr. Kuldeep Dubey :	Principal
Dr. G. Padma Gouri:	Vice Principal
Mrs. Bani Saha:	Faculty Member
Mrs. Yashswee Lonkar	Faculty Member
Fr. Julius Xess :	Management Representative
Mr. Pramod Dubey:	Member Secretary

GROUND FLOOR

DEPARTMENT/ROOMS	FAN	LED TUBLIGHT	CFL	AC	FRIDGE	COMPUTER	PRINTER	SCANNER	XEROX MACHINE	PROJECTOR	BOREWELL MOTOR	EXHAUST	COOLER	WATER COOLER	GEEZER	INDUCTION	SPEAKERS
AVA ROOM	-	0	8	2	-	4	-	-	-	1	-	-	-	-	-	0	2
COMPUTER LAB-1	2	4	-	1	-	2	-	-	-	-	-	-	-	-	-	-	-
COMMERCE HOD CABIN	2	2	0	1	-	1	1	1	-	-	-	-	-	-	-	-	-
MANAGEMENT HOD CABIN	2	2	-	-	-	1	1	1	-	-	-	-	-	-	-	-	0
VICE PRINCIPAL CABIN	1	1	1	1	-	1	1	1	-	-	-	-	-	-	-	-	-
GUEST ROOM 1	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	0
GUEST ROOM 2	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	0
BOYS COMFORT	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	0
PGDCA	3	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COM & MANG. (STAFF ROOM)	4	-	5	-	-	-	-	-	-	-	-	-	1	1	-	-	-
COUNSELLING AREA	3	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OFFICE	3	3	4	-	1	2	1	1	1	-	1	-	1	-	-	-	-
CONTROL ROOM	2	1	5	-	-	-	-	-	-	-	-	1	-	-	-	1	-
BCA-1	4	-	4	-	-	1	-	-	-	-	-	-	-	-	-	-	-
BCA-2	4	2	2	-	0	1	-	-	-	-	-	-	-	-	-	-	-
BCA-3	4	-	4	-	-	1	-	-	-	-	-	-	-	-	-	-	-
COMPUTER DEPARTMENT	1	12	-	2	-	22	1	1	-	-	-	-	-	-	-	-	-

Audit Observations:

DEPARTMENT/ROOMS	FAN	LED TUBLIGHT	CFL	AC	FRIDGE	COMPUTER	PRINTER	SCANNER	XEROX MACHINE	PROJECTOR	BOREWELL MOTOR	EXHAUST	COOLER	WATER COOLER	GEEZER	INDUCTION	SPEAKERS
LIBRARY	13	13	2			5	1	1	1				1				
CANTEEN	7	5	2		1							2					
SPORTS	5	7	4			1	1	1									
HOSTEL	62	62	90		1	1					3	1	7				

Equipments	FAN	LED TUBLIGHT	CFL	AC	FRIDGE	COMPUTER	PRINTER	SCANNER	XEROX MACHINE	PROJECTOR	BOREWELL MOTOR	EXHAUST	COOLER	WATER COOLER	GEEZER	INDUCTION	SPEAKERS
Total Quantity	199	157	207	11	2	54	9	9	2	2	4	8	9	2	2	3	6
Total Power consumption per Hour	55	22	40	1424	800	346	230	30	3000	340	2350	70	160	81	20	1600	50
Power consumption per day	5472	1727	4140	15664	38400	18684	1035		3000	680	4700	560	720	324		1200	

Total Monthly Average Power Consumption of Instruments

= 2311344 Watts

= 2311.344 KW

Power Consumption of Electricity Board

S. NO.	Month	Consumption Unit (KW)
1	October 18	2589
2	November 18	2070
3	December 18	1269
4	January 19	1773
5	February 19	1569
6	March 19	1503
7	April 19	1922
8	May 19	1328
9	June 19	2853
10	July 19	2270
11	August 19	4711
12	September 19	2252
Yearly Power Consumption		26109

Average Monthly Power Consumption: = 2175.75 KW

Action Taken Report

St. Vincent Pallotti College is a higher education institution that remain to strict moral and ethical principles in striving towards excellence. To maintain quality of education with the increasing life skills among the students is objectives of this institution. With respect to sustainable development goals the college management adopted an environmental policy for the college. The infrastructure of the college campus is as such most of the rooms remain lighted with the natural light. The cross ventilation of the building keeps the classrooms airy and fresh. All the recommendations to maintain eco-friendly green campus were followed by the college management is very much appreciating

Recommendation:

- 1) Replace all CFL Tube light with LED Bulb to save more power.
- 2) Replace CRT monitor using LED or LCD monitor.
- 3) Separate connection of office, Computer Lab. and classroom should be established.
- 4) Go for instalment of Solar Panels over the terrace of the college building to make it more eco-friendly.

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