



Janseva Shikshan Mandal's

**Shantarambhou Gholap Arts, Science and
Gotirambhou Pawar Commerce College, Shivle**

Tal:-Murbad Dist:- Thane 421 4001

(Affiliated to University of Mumbai)

ENERGY AUDIT REPORT

(Academic Year 2020-21)

Name of the Institute :-Janseva Shikshan Mandal's Shantarambhou Gholap Arts,
Science and Gotirambhou Pawar Commerce College, Shivle
Tal:-Murbad Dist:- Thane 421 401.


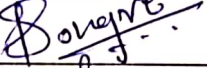

Energy Audit Perform by :- Prof. R V Bhalewar (M.Sc, B Ed- Physics), Murbad Dist:-
Thane and Team

Acknowledgement

Data collection for energy audit of the Shantarambhau Gholap Arts, Science and Gotirambhau Pawar Commerce College, Shivle Campus was conceded by team for the period of **1 April 2020 to 31 March 2021**. This audit was over sighted to inquire about convenience to progress the energy competence of the campus. To drop of energy utilization whilst cultivate or humanizing comfort, health and safety were of prime anxiety. 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. The energy audit survey was completed by Department of Physics. 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.

We sincerely thank the college staff for providing us necessary facilities and co-operation during the audit. This helped us in making the audit successful.

ENERGY AUDIT COMMITTEE 2020-21

Sr. No.	Name	Designation	Sign
1.	Prof. R V Bhalewar	Chairman	
2.	Dr S S Dongare.	Member	
3.	Mr. N S Choudhari	Member	



PRINCIPAL

Jan seva Shikshan Mandal's
**Shantarambhau Gholap Arts, Science &
Gotirambhau Pawar Commerce College,**
Shivle, Tal. Murbad, Dist. Thane-421401.

Institution

Introduction:

Shantarambhau Gholap Arts, Science and Gotirambhau Pawar Commerce College Shivle, permanently affiliated to the University of Mumbai, was established in 1989. It is multi-faculty college and offers 11UG (8 Grantable, 3 Non-grantable/ self- financed) and 8 PG Self-financed /Non- grantable programs. UGC has also given 2(f), 12(B) status to the college on 13th April 2000. The college was awarded “Best College” Award in Rural category by the University of Mumbai in the academic year 2008-09. The college has also ISO certification 9001:2015. First cycle of NAAC Accreditation was done in 2003 with B+ grade and Second cycle Accreditation was done in 2011 with B grade (2.80 CGPA). The College conducts certificate courses / Value added courses to enrich students with different branches of knowledge. The college has MoUs with various agencies to provide students training for the recruitment of Police and also coaching for Competitive examinations. As the college is located in Rural and Hilly area, various outreach and community oriented programs have been conducted by the college. The college has adequate infrastructure facilities to provide quality education to our students.

Location:

The college is located in rural and hilly area of Murbad Tehshil of Thane District in Maharashtra. All the students are from rural and poor families of the Tehshil.

Energy Audit Report

Introduction:

A nation is tiring to advance in quantity and quality to the spread of education among the common India and development of their intelligence. In India the entire field of education and other fields of intelligent activities had been monopolized by a handful of men before independence. But today we are marching towards the desirable status of a developed nation with fast strides. But the development should be a sustained one. For achieving such an interminable development energy management is essential . As far as concerning electricity crisis, we are facing lack of electricity during office work. So, institutional management is taking design regarding production of electricity and saving electricity for eco- social aspect.

Energy requirement of India is growing and incomplete domestic fossil fuel treasury. The country has motivated strategy to enlarge its renewable energy resources and policy to establish the nuclear power plants. India increases the involvement of nuclear power to largely electrical energy development facility from 4.2% to 9%. India's industrial demand accounted for 35% of electrical power requirement, domestic household use accounted for 28%, agriculture 21%, commercial 9%, and public lighting and other miscellaneous applications accounted for the rest. Energy conservation means reduction in energy consumption without making any sacrifice of quantity or quality. A successful energy management program begins with energy conservation. it will lead to adequate rating of equipment's, using high efficiency equipment and change of habits which causes enormous wastages of energy . By observing all these study lack of electricity and huge electricity demands. It is necessary to plan to being self-sufficient in electricity requirement.

In the present study, college electricity audit has been done. In this study considered practical laboratory, instrument, Fans, air conditioners, Computers etc are considered in this study. We have studied total budget of the college, total economic investment of college on the electricity and total generation electricity from the solar wind hybrid electricity generation unit. Also, we have studied total saving of electricity and money from solar wind generation and requirement of solar energy. Also, it is studied that exact contribution of bulb, fans, computer, instruments etc in the total requirement of electricity. We studied all these mentioned thinks by collecting exactly data form survey.

Total Power Requirement of Various Equipment

Sr. No	Department	Fan	LED Tube light	CFL Tube light	AC	Fridge	Computer	Printers	Scanners	Xerox	Projector	Borewell Motor	Invertor	TV	LED Halogen	Total
1	Principal Office	2	2	2	1	-	1	-	-	-	-	-	-	1	-	9
2	Vice Principal Office	1	2	-	-	-	3	2	1	3	-	-	-	-	-	12
3	University Exam Office	2	4	-	-	-	-	-	-	-	-	-	-	-	-	6
4	Digital room	1	4	-	-	-	2	-	-	-	-	-	-	-	-	7
5	College Exam Office	4	7	-	-	-	2	-	-	-	-	-	-	-	-	13
6	General Office	6	6	-	-	-	8	4	1	-	-	-	-	-	-	25
7	Class Rooms (Building 1)	8	8	-	-	-	-	-	-	-	-	-	-	-	-	16
8	Washroom (Building 1)	-	-	3	-	-	-	-	-	-	-	-	-	-	-	3
9	Passage (Building 1)	-	-	3	-	-	-	-	-	-	-	-	-	-	-	3

10	Seminar Hall (Building 1)	12	-	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26
11	Class Rooms (Building 2)	45	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	75
12	Washroom (Building 2)	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
13	Passage (Building 2)	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
14	Library	23	28	1	-	-	13	1	-	-	-	-	1	-	-	-	-	1	68
15	Library Seminar Hall	14	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22
16	Library Washroom	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
17	BMS Class Room	6	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
18	CS Class Room	14	3	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	19
19	IT Class Room	4	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
20	Gymkhana	2	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9

21	NSS Office	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7
22	DLL Office	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
23	Physics Lab/Department	9	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22
24	Zoology Lab/Department	7	10	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	20
25	Chemistry Lab/Department	18	24	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	45
26	Computer Lab (CS)	2	6	-	-	1	-	-	-	35	-	-	-	-	-	1	-	-	46
27	Computer Lab (IT)	4	2	-	-	1	-	-	-	25	-	-	-	-	-	-	-	-	32
28	NAAC/IQAC Office	4	4	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	10
29	JSM Office	9	11	1	2	-	-	-	-	2	-	-	-	-	-	-	-	-	26
30	Canteen	4	4	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	10
31	IQAC Meeting Room	6	6	-	-	2	-	-	-	1	-	-	-	-	-	1	-	-	16

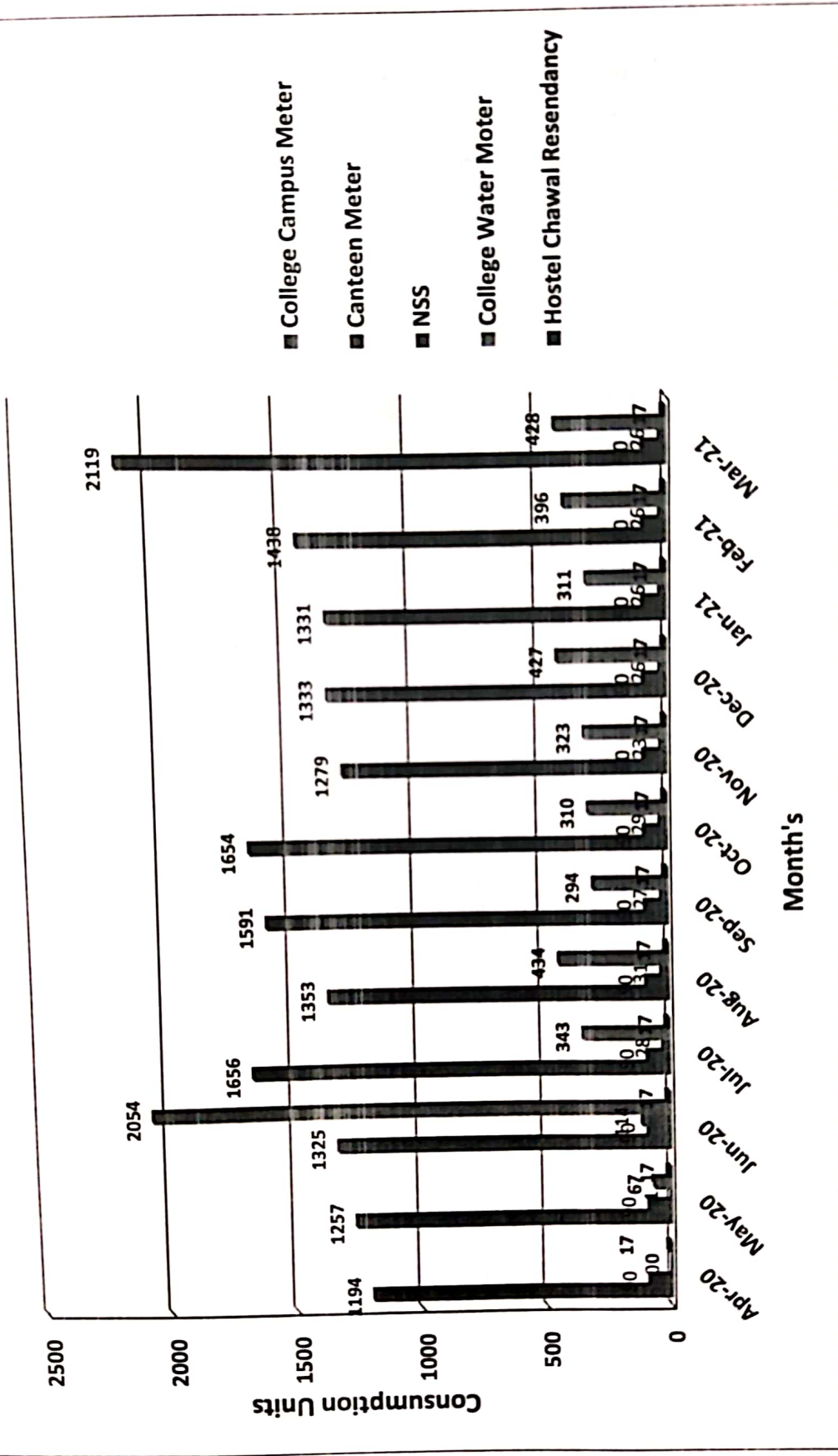
32	Principal Rest Room	2	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
33	Library Three Floor	11	12	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30
34	Campus Street Light	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
	Total	226	232	33	7	1424	4	96	12	2	30	3	4	1	2	5	2	100	500	5	627
	Total Power Consume in '1' hours(Watt)	55	22	40	1424	2000	346	230	30	3000	340	5968	1600	20000	735088						
	Total Power Consume in '8 hours(Watt)	99440	40832	10560	79744	64000	265728	22080	480	72000	10880	47744	0	20000	735088						
	Total Power Consume in '8 hours(KW)	99.44	40.832	10.56	79.744	64	265.728	22.08	0.48	72	10.88	47.744	0	20	735.088						
	Total Power Consume Monthly (KWH)	2585.4	1061.632	274.56	2073.3	1664	6908.928	574.08	12.48	1872	282.88	1241.344	0	520	19112.3						
	Average Power Consume monthly (KWH)																				

1593

Power Consumption of Electricity Board

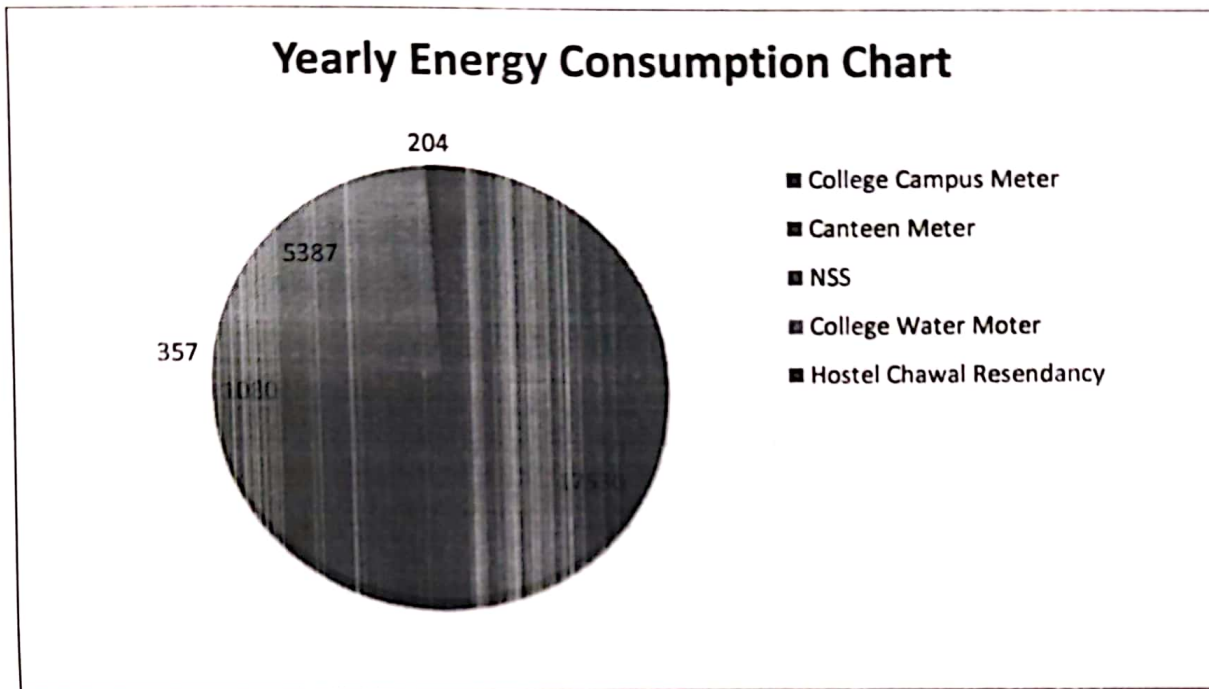
Sr. No	Connection Name	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Total
1	College Campus Meter	1194	1257	1325	1656	1353	1591	1654	1279	1333	1331	1438	2119	17530
2	Canteen Meter	90	90	90	90	90	90	90	90	90	90	90	90	1080
3	NSS	0	1	114	28	31	27	29	23	26	26	26	26	357
4	College Water Moter	0	67	2054	343	434	294	310	323	427	311	396	428	5387
5	Hostel Chawal Rescandancy	17	17	17	17	17	17	17	17	17	17	17	17	204
Total		1301	1432	3600	2134	1925	2019	2100	1732	1893	1775	1967	2680	<u>24558</u>

Monthly Energy Consumption Chart



Survey and data collection:

All required data is collected by Department of Physics. In building, in every room, how much fans, tubes, fans, computer, instrument AC, etc will these is measured. According to survey following data is collected.



Conclusion:

In conclusion, data generated in energy audit are useful to understand the energy distribution and utilization in college campus. As per data collection from power requirement of various equipment average maximum **1593 KW** per month electricity required in college. As per electricity bill by month wise we observed maximum utilization of energy in college **2047 KWH**. This indicates **454 KWH** energy is excess than our requirement as per college data survey. This may due to leakage of current, old instrument, due to low maintenance, etc

Results and discussion:

As far concerning the energy audit, electricity audit is main concern regarding educational institution. We have collected data by considering the tube light, fan, computer, printer, A.C and instruments etc. The total required average energy is **1593KW** per month.

Recommendation:

- 1) Apply renewable energy sources like solar energy, wind power plant to save more and more electric energy
- 2) Replace all CFL Tube light using LED Bulb, to save more power.
- 3) Replace CRT monitor using LED or LCD monitor.
- 4) Replace all old electric wiring with proper maintenance.
- 5) Update all laboratories with proper electric connection and also inverter connection.
- 6) When we does not use electric energy (fan, computers, led bulb, etc) in our department then kindly switch off main-switch of the concern department/ offices.
- 7) Install all street lamp with automatic solar street lamps.