



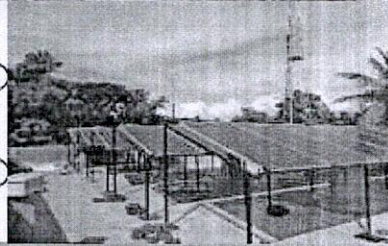
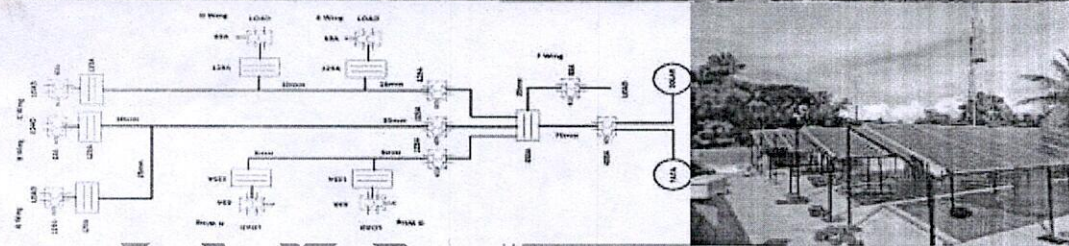
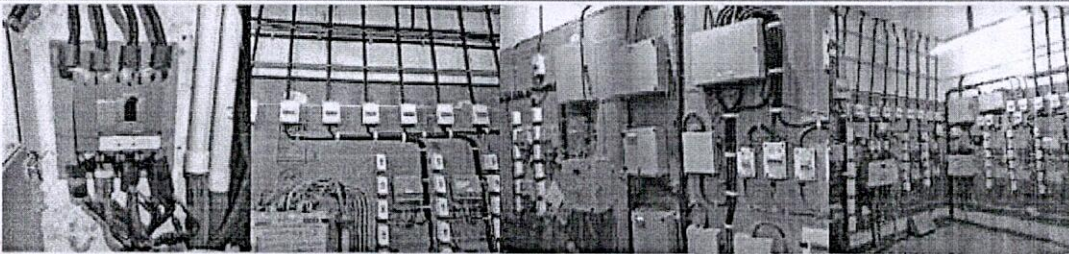
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- Liasoning
- Energy Audit
- Safety Audit
- Electrical Projects
- Solar Projects

SSS SCIENCE & COMMERCE COLLEGE PANT NAGAR, GHATKOPAR, MUMBAI

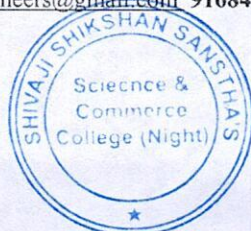


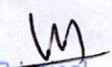
Report By

M/s. Saur Engineers &
Consultants Pvt. Ltd.,
Mumbai.

- Registered Energy Auditor
- Power Consultant
- Channel Partner-MNRE, Govt. of India.
- Channel Partner-MEDA, Govt. of Maharashtra.
- Solar Grid Engineers, NISE, Govt. of India
- Licensed Electrical Contractor.

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Detailed Report

Energy-Green-Environment Audit

Project Beneficiary

2023-2024

SSS SCIENCE & COMMERCE COLLEGE

Pantnagar Ghatkopar (East)
Mumbai, Maharashtra

Consultants & Auditor

SAUR
Engineers & Consultants
Pvt. Ltd.

REGISTRATION NO. : EA-28

D-8, Plot No. 108, Akshay, Rsc-16,
Gorai-1, Borivali (west), Mumbai-400092
MAHARASHTRA
+919867499812/+919168402909

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Acknowledgement

Energy, Green and Environment Audits have been successfully completed by M/s. Saur Engineers & Consultants Pvt. Ltd. Empanelled Energy Auditor(CLASS-A) MEDA, Government of Maharashtra and an ISO 14001:2015 company.

This activity is jointly executed by auditor and beneficiary to account Environmental diversities and development opportunity without sacrificing it's purpose. The main object was to assess the existing system for Environment concerns, High quality, professional and sustainable Environment management, Adopt best practices and Standard operating procedures.

Beneficiary premise is a leading educational service utility in semi-urban area. The college is run as per the norms and standards and having awareness and approach towards Environment saving. The management and staff are keen on saving greenery and energy on every opportunity available.

We sincerely acknowledge efforts of Management and staff members for smooth execution of audit process. We sincerely acknowledge the leaders and guides of the activity who helped to design and supported to the execution of the process

Team Head

Principal

Team Member, Teaching

Team Member, Teaching

Team Member, Non-Teaching

Team Member, Non-Teaching

Team Member, Student

Team Member, Student

Team Member, Student

Team Member, Student

Team Member, Electricity

Team Member, Gardening

Team Member, Helper

Mr. Shrikant Nare

Dr. Vijay Herode

Gajendra Shukla

Tejal Nare

Lalitkumar Chavan

Varsha Rane

Sahdeo Tandel

Ansh Mhatre

Darshan Patankar

Digvijay Patil

Shivram Thackrey

Shashi Shelar

Dhanjay Jethe

and all other technical, teaching, non-technical staff and students of college.

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Certificate

This is to certify that Energy, Green and Environment Audits have been successfully completed by M/s. Saur Engineers & Consultants Pvt. Ltd. Empanelled Energy Auditor(CLASS-A) MEDA, Government of Maharashtra and suggestions for improvements have been given. The Audit activity has been executed for beneficiary with following Details:-

Name of Beneficiary: SSS College of Science & Commerce

Registration Number:

Address: Pant Nagar, Ghatkopar, Mumbai

Contact Person: Mr. Anil Herode

Contact Number: 9370730578

Date of Audit: 10/05/2024

The report is generated from data, information, answer to asked questions, standards and procedures defined by different and concerned authorities time to time, available site condition, weather condition, operational and availability conditions provided by beneficiary on the day of survey. If any changes on above said measures on any other parameters affecting these measures may lead to change, alter, in-corrections even falsifying calculations, results, recommendations and suggestions. The values, figures, amounts mentioned are indicative to the site situation and condition; it may not reflect each and every aspect of it. The report is generated restricted to given scope and available conditions and measures.



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Mumbai - 400 061.

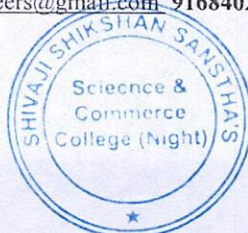
Sign & Seal

Saur Engineers & Consultants Pvt. Ltd.

Registration No: EA-28

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MEDA, Government of Maharashtra

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1. Introduction

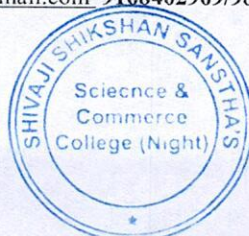
1.1. Energy Audit

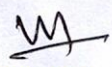
Energy Audit is a Basic essential activity to be done for saving in electrical billing and also allied with any energy saving projects like renewable energy project and solar projects. Energy Audit is an assessment of usage, consumption and pattern of energy used in the premises based on all above parameters along with conditions and benchmarks as resource and Building Envelope Analysis, working, operational and Maintenance Procedure Analysis, Utility Data Analysis, Load Data Analysis, Analysis of Energy Consumption, Load Evaluation, consumption pattern and billing history, back-up systems and also the administrative requirements, assessment of safety concerns, assessment of operating and occupancy schedules for Equipment, Power Quality and Environmental Parameters Analysis, Efficiency and Wastage Analysis and assessment of potential risk factors.

Energy Audit is a process of systematic identification, quantification, recording, reporting and analysis of energy usage properties of institute. It aims to analyze within and surrounding the place concerned, which will see interrelation with eco-friendly atmosphere. Energy audit is a valuable means for an Institution related to educational area to determine how and where they are connected with Energy conservation drive of nation. Understanding these conditions the institution can make plans for day to day working, future expansions as well as an eco-friendly view of life while making changes and planning for savings. It provides better understanding of impact of energy consumption on working conditions to staff and visitors. As the Energy availability is becoming an increasingly important issue for the nation, the role of higher education institute is more vital and prevalent in relation with the issue.

The rapid urbanization and economic development at local, regional and global level has led to Energy availability and quality crisis. On this background it becomes essential to adopt the system of Energy efficient and safe Campus for the institution which leads for sustainable development and at the same time persisting the quality of the same while travelling on the growth path. Moreover, it is social responsibility of a High energy consuming institution to ensure that they contribute towards the saving of Energy and thus making it available who are destitute in term of energy availability.

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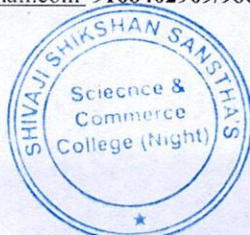
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1.2. Green Audit

Green Audit is a process of systematic identification, quantification, recording, reporting and analysis of components of natural diversity properties of institute. It aims to analyse within and surrounding the place concerned, in purview of relationship with natural diversity around. Green audit is a valuable means for an Institution related to educational area to determine how and what natural resources or diversity of nature they are surrounded with or they are living with. Green Audit report includes assessment of premises which refers to nature friendly environment with lesser carbon emission in terms of initiatives, implementation, best practices, working environment, capacity utilization based on all above parameters observed during green audit along with conditions and benchmarks as Air Quality, Water Quality, Noise Data, Weather Data, Tree Diversity, Faunal Diversity as well as biodiversity conditions. Understanding these conditions the institution can make plans for day to day working, future expansions as well as a nature-friendly view of life while making changes and planning for savings.

It can create consciousness and awareness about natural diversities around and helps to standardize practices for working with observation of nature friendly work style. It provides better understanding of green diversity available surrounding conditions to staff and students. As the vanishing diversity of nature is becoming an increasingly important issue for the nation as well as the world, the role of higher education institute is more vital and prevalent in relation with the issue.

The rapid urbanization and economic development at local, regional and global level has led to several greenery and ecological crisis. On this background it becomes essential to adopt the system of Green Campus for the institution which leads for sustainable development and at the same time persisting the quality of the same while travelling on the growth path. The National Assessment & Accreditation Council, New Delhi (NAAC) has made it mandatory to all Higher educational institutions should submit a Green Audit Report. Moreover, it is social responsibility of a Higher educational institution to ensure that they contribute towards the saving of Green areas and maintaining good levels of qualities for natural resources available such as Air, water, atmosphere, flora, faunal, Etc.





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1.3. Environment Audit

Environmental Audit is a process of systematic identification, quantification, recording, reporting and analysis of impact on components of environmental diversity properties of institute. It aims to analyse within and surrounding the place concerned, which will see interrelation with eco-friendly atmosphere. Environmental audit is a valuable means for an Institution related to educational area to determine how and where they are impacting on natural resources or diversity of nature. Environmental audit report includes assessment of premises which refers to impact on environment with carbon emission, wastages in terms of initiatives, implementation, best practices, working environment, capacity utilization based on all above parameters observed during Environmental audit along with conditions and benchmarks as Wastage types, recycling, Greenery, effect of impact, Carbon footprints as well as biodiversity conditions. Understanding these conditions the institution can make plans for day to day working, future expansions as well as an environment-friendly view of life while making changes and planning for savings.

It can create health consciousness, environmental awareness, practice green values and ethics. It provides better understanding of impact on surrounding conditions to staff and students. If self-enquiry is natural and necessary outgrowth of a quality education, it could also be stated that institutional self-enquiry is natural and necessary outgrowth of a quality educational institution. Thus it is imperative that the institution evaluates its own contributions towards a sustainable future. As the pollution and CO_2 is becoming an increasingly important issue for the nation, the role of higher education institute is more vital and prevalent in relation with the issue.

The rapid urbanization and economic development at local, regional and global level has led to several greenery and ecological crisis. On this background it becomes essential to adopt the system of Green Campus for the institution which leads for sustainable development and at the same time persisting the quality of the same while travelling on the growth path. The National Assessment & Accreditation Council, New Delhi (NAAC) has made it mandatory to all Higher educational institutions should submit a Environmental audit Report. Moreover, it is social responsibility of a Higher educational institution to ensure that they contribute towards the saving of environment and reduce level of quantity for impact on natural resources available.





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1.4. Objective

The Energy audit of an institution has becoming the paramount important for self-assessment of the Institution which reflects in the role of the institution in mitigation to current problem of reducing Energy availability and quality. The institution has been putting efforts to keep reducing and standardizing energy usage since its inception. Therefore the purpose of present Energy audit is to identification, quantification, recording, reporting and analysis of components of Energy utilization and electrical safety properties of institute framework of energy conservation in compliance with the applicable regulations, policies and standards. The main objectives to carrying out the energy audit are:-

- To have overview of premises
- To record and document Utility data
- To record and document Load profile data
- To record and document basic Electrical Safety observations data
- To record and document Energy Conservations (if any)

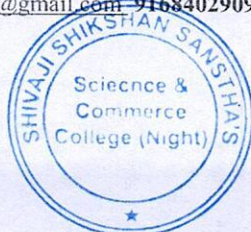
The green audit of an institution has becoming the paramount important for self-assessment of the Institution which reflects in the role of the institution in mitigation to current problem of reducing greenery and natural resources depletion. The institution has been putting efforts to keep clean and green atmosphere since its inception. Therefore the purpose of present green audit is to identification, quantification, recording, reporting and analysis of components of natural diversity properties of institute framework of Green atmosphere sustainability. The main objectives to carrying out the green audit are:-

- To record and document Air quality data
- To record and document Water quality data
- To record and document Weather/Meteorology data
- To record and document Noise Level data
- To record and document Tree Diversity data
- To record and document Faunal diversity data

The Environmental audit of an institution has becoming the paramount important for self-assessment of the Institution which reflects in the role of the institution in mitigation to current problem of reducing greenery and natural resources depletion. The institution has been putting efforts to keep clean and green atmosphere since its inception. Therefore the purpose of present Environmental audit is to identification, quantification, recording, reporting and analysis of components of surrounding environmental properties of institute framework as a part of global environment sustainability. The main objectives to carrying out the Environmental audit are:-

- To record and document Wastage type and management
- To record and document Recycling Procedures
- To record and document Impact on environment
- To record and document Carbon footprints

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1.5. Methodology

The purpose of Energy Audit of is to ensure that the practices followed in the campus are in accordance with the Energy Conservation Policy of the Country. The methodology includes: collection of data, physical inspection of the campus, observation and review of the documentation and data analysis.

The report is based on the documents obtained while on site, visual inspection and data collection carried out during the assessment period. All the measurements recorded on site are indicative loads and duties. All readings are collected for analysis and improvement planning. Cost estimates are indicative only as more detailed design and acceptance of suggestions will be required to improve the accuracy of these estimates.

The units are selected from SI (international standards) with meters, Celsius degrees, Etc.

1.6. Audit Statement

The building is adopting the "Energy Efficient Campus" system for Energy conservation and sustainability. There are main three pillars i.e. Energy saving by technology and Operation & Maintenance procedures, safe working on occupational health and performance and 100% inmates demonstrating energy efficiency literacy. The goal is to maintain safe working environment, reduce energy consumption, while creating an atmosphere where inmates can work and live healthy.

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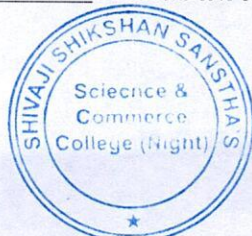
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2. OVERVIEW

2.1. LOCATION

SL No	Head	Details	Remark
1	Name of Institute	SSS SCIENCE & COMMERCE COLLEGE (NIGHT) PANTNAGARGHATKOPAR(EAST) MUMBAI	
2	Category	Educational Institute	
3	Address	PANTNAGARGHATKOPAR(EAST) MUMBAI	
4	State	MAHARASHTRA	
5	Nearest Railway Station	CSMT GHATKOPAR	Outstation Local
6	Nearest Bus Station		Interstate Intrastate
7	Nearest Airport	CSIA	
8	Longitude	19.0845N	
9	Latitude	72.9105E	

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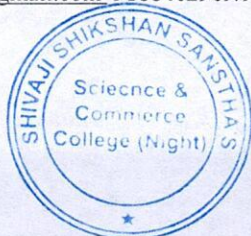
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2.2. Synopsis

SL No	Head	Details
1	Name of Applicant Institution	SSS SCIENCE & COMMERCE COLLEGE (NIGHT) PANTNAGARGHATKOPAR(EAST) MUMBAI
3	Address	PANTNAGARGHATKOPAR(EAST) MUMBAI
4	Contact Number	9370730578
5	Registration Certificate Number	NA
6	Sector Type	Education
7	Senior Management Contact	9892004900
8	Contact Number	9370730578
9	Status of Institution (Pvt./Public)	PUBLIC
10	Company Turnover (Rs. In Lakhs)	Na
11	Number of Employees	12
12	Approximate Floor Area (ft2)	11320 SQ MTR
13	Year of Establishment	2013
14	Plot Area (ft2)	16859.44SQ FT
15	Constructed Area (ft2)	8751.93MTR
16	Greenery Area (ft2)	4520.15MTR
17	Roof Area (ft2)	2432SQ MTR
18	No of Buildings	1
19	Building Type	EDUCATION
20	Age of Building	30
21	Leakages/Cracks on wall/roof	No
22	No. of workers (Footfall)	15
23	No. of Customers (Footfall)	150
24	Day Vs Night activity in %	NIGHT
25	Shifts per day	1
26	Hours per shift	8
27	DG Set installed	No
28	Inverter Installed	No
29	Renewable Energy System installed	Yes
30	(Solar/Wind/Biomass/Biofuel/Etc.)	Solar 8Kw

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2.3. Layouts

Sitemap

– NA

Floor Map

– NA

Google Map

– NA

2.4. About Premises

Shivaji shikshan sanstha commerce and science(night) college established in 2013 .the college is provide higher education in weaker section students college alumini, parents and members of the society have contributed immensely my college is committed towards our students acquiring values ethical and honest maintain good physical and mental health and there by help in the process of nation building.

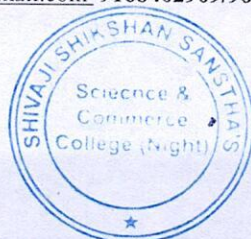


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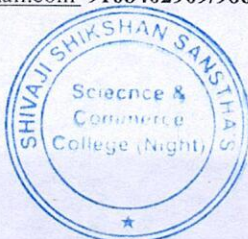
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2.5 Documentation:

ITEM	YES/NO
a. Existing Statutory Layouts	
i. Plot Map / Sketch	NO
ii. Building / Floor Map (For Each Floor)	NO
iii. Roof Terrace Map	NO
iv. Electrical SLD	NO
v. Details Electrical Control Panels	NA
vi. Details of Transformer installed if any	NA
vii. Details of Generator (DG-Set) installed if any	NA
viii. Details of UPS installed if any	NO
ix. Details of Renewable systems installed if any	NA
x. Utility Bills (Electricity, Gas, Water, Diesel, Etc.) for 12 months	NO
xi. Registers of Records	NO
xii. Time Tables	YES
xiii. Nameplate Data	NO
xiv. Manuals	NO
b. Existing safety measures (Fire extinguishers, Safety training and posters)	NO
c. Verification of circulars, Records of Preventive measurements	NO
d. Verification of Behavioural SOP	NO
e. Verification of O & M SOP	NO
f. Checking Provision for electric shock response and treatment	NO
g. Checking Log of Electrical works/accidents	NO
h. Checking Provision of Danger Sign Boards	NO
i. Checking Workmen involved in electric work	NO
j. Checking Provision and Height of work	NO
k. Checking availability of First Aid	NO

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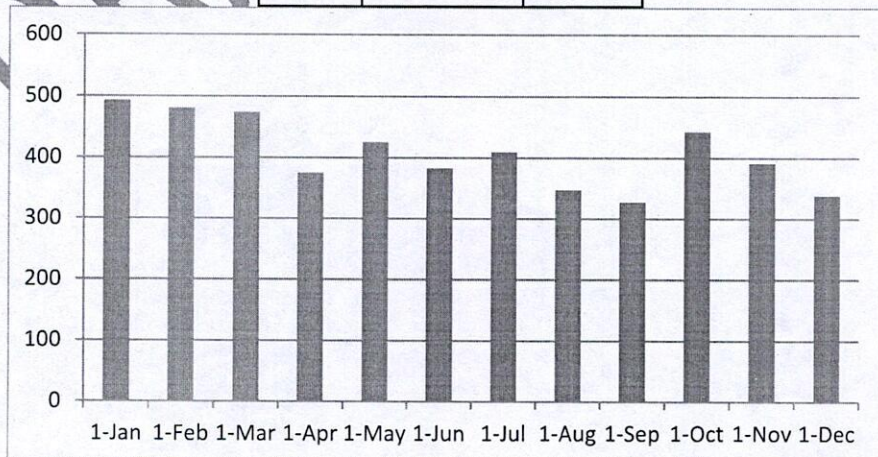
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3. Energy Audit

3.1. Electricity and Fuel Consumption Analysis

SL No.	Particulars	Unit	VALUES
1	Supply Type	LT/HT	LT
2	Utility Company	DISCOM	AECL
3	Consumer Number	NO	152517722
4	Meter Number	NO	9075136
5	Feeder	SOURCE	NA
6	Tariff	TYPE	LT B
7	Sanctioned Load	KW	8.28
8	Connected Load	KW	8.28
9	Contract Demand	KVA	0
10	RMD (Year)	KVA	0

Month	Consumption	Expenses
(NAME)	(KWH)	(Rs)
23-Jan	493	4746.0
23-Feb	480	4624.6
23-Mar	474	4568.7
23-Apr	375	3644.7
23-May	425	4111.4
23-Jun	383	3719.4
23-Jul	409	3962.0
23-Aug	347	3383.4
23-Sep	327	3196.8
23-Oct	443	4279.3
23-Nov	391	3794.0
22-Dec	338	3299.4



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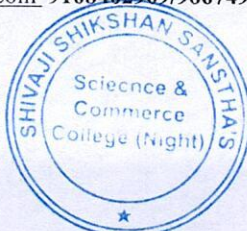
Other Energy Sources					
SL No	Energy/Fuel	Applicable	Unit	Use per Annum	Cost Per Annum (Rs)
1	Coal		NA		
3	Lignite		NA		
4	Fuel wood & Biomass		NA		
5	High Speed Diesel		NA		
6	Light Diesel		NA		
7	LSHS		NA		
8	LPG		NA		
9	Natural Gas	• PNG • LNG • CNG	NA		
10	Renewable Power		NA		
11	Captive (DG Set)		NA		

3.2. Consumption pattern

HEAD	Usage (Kwh)	Payment (Rs)	Duration
Total	4885.0	47329.8	Annual
Min	327.0	3196.8	Sept
Max	493.0	4746.0	Jan
Average	407.08	3944.15	Annual

Note: All Bills are not preserved by college; assessment is done on the basis of provided Data.

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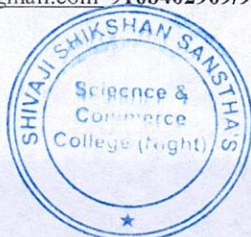
3.3. Future Expenses Projection on Electricity Bills for Next 20 Years

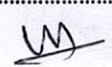
It is observed past 15 years that electricity rates are increasing with an average growth of 5% per annum. Following table will show how much amount we are going to spend on electricity next twenty years with this growth rate and same consumption.

SL No	Year	Unit Rate	Expenses
1	2023-2024	9.33	45577.05
2	2024-2025	9.80	47855.9
3	2025-2026	10.29	50248.7
4	2026-2027	10.80	52761.13
5	2027-2028	11.34	55399.19
6	2028-2029	11.91	58169.15
7	2029-2030	12.50	61077.61
8	2030-2031	13.13	64131.49
9	2031-2032	13.78	67338.06
10	2032-2033	14.47	70704.96
11	2033-2034	15.20	74240.21
12	2034-2035	15.96	77952.22
13	2035-2036	16.76	81849.83
14	2036-2037	17.59	85942.33
15	2037-2038	18.47	90239.44
16	2038-2039	19.40	94751.41
17	2039-2040	20.37	99488.98
18	2040-2041	21.38	104463.4
19	2041-2042	22.45	109686.6
20	2042-2043	23.58	115170.9

You are going to spend Rs. 15,00,000/- (Rs. Fifteen Lakhs Only) on electricity bills in coming 20 years; if we keep current consumption as it is.

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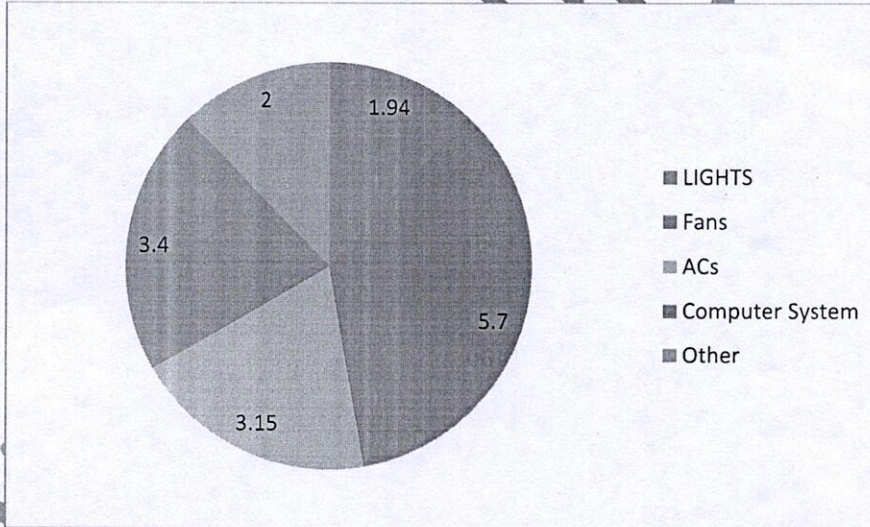
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3.4. Load Profile

Room	Normal Tubes	LED Tubes	Fans	ACs	PC	Printer
1	00	07	07	03	08	04
2	00	05	04	00	04	00
3	00	14	10	00	16	00
4	00	13	11	00	00	00
5	05	09	11	00	00	00
6	02	12	11	00	00	00
7	04	09	11	00	00	00
8	00	06	11	00	00	00

LOAD PROFILE (KW)						
LOAD	LIGHTS	Fans	ACs	Computer System	Other	TOTAL
VALUES	1.94	5.7	3.15	3.4	2	16.19



3.5. Losses

3.5.1. Demand

No Demand Recording observed

3.5.2. Conservation

1. Replacing regular Fans with BLDC Fans.
2. Replace Regular Tubes with LED Tube lights.

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4. GREEN AUDIT

4.1. Floral Diversity

Year	No. of Trees
BEFORE 2022-2023	32
2022-2023	00
Total	32

Sr. No.	Trees	Total Trees
1.	Rain Tree	07
2.	Peltiforum	17
3.	Chendu phal	01
4.	Ashok	01
5.	Fanas	05
6.	Forest Tree	01
Total		32

SUMMARY

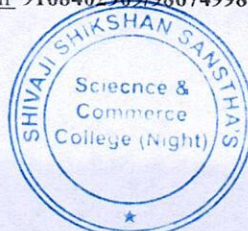
Sr. No.	Area	Total Trees
Total		32

4.2. Faunal Diversity

The college campus as very much common in Mumbai City the college is limited to its plot premises hence having no scope for plantation within. Since there is negligible plantation within and surrounding of College campus there are very less animal species were observed in including invertebrates and vertebrates (different groups like Beetle, Moth, Bug, Bird, Ant, Spider, Wasp, Millipede, Slug, Louse, Earthworm, Snail, Butterfly, Dragonfly, Grasshopper etc.).

SL No	Scientific Name	Common Name	Family	Category
1	Copelatus haemorrhoidalis	Diving beetle	Dytiscidae	BEETLE
2	Spodoptera exigua	Beet armyworm	Noctuidae	MOTH
3	Columba livia	Rock pigeon	Columidae	BIRD
4	Passer domesticus	House sparrow	Passeridae	BIRD
5	Corvus splendens	Crow	Corvidae	BIRD
6	Camponotus consobrinus	Banded sugar ant	Formicidae	ANTS
7	Eratigena atrica	Giant house spider	Theridiidae	SPIDER
8	Calotes versicolor	Indian garden lizard	Agamidae	REPTILE
9	Ratus ratus	Rat	Muridae	MAMMAL
10	Funambulus palmarum	Indian palm squirrel	Sciuridae	MAMMAL

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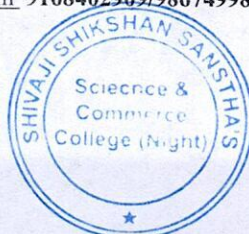
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4.3. Green Approach

Sr. No.	ACTIVITY	YES/NO	REMARK
1.	E-waste collection box:	NO	
2.	Dry-waste collection box:	YES	Dry Waste is collected in a Box Provided by Municipal Corporation and taken away by the same.
3.	Wet-waste collection box:	YES	Wet Waste is collected in a Box Provided by Municipal Corporation and taken away by the same.
4.	Paper-waste collection box:	NO	
5.	Cleaning:	YES	Institute runs good cleaning practice.
6.	Composting:	NO	
7.	Safe and waste free environment drive:	NO	
8.	Sewage treatment	NO	
9.	Waste management	NO	
10.	Swachh Bharat campaign	NO	
11.	Water resources	YES	Institute have sufficient water resources from local body supply.
12.	Rain water harvesting:	NO	
13.	Waste water treatment:	NO	
14.	RO water treatment	YES	Institute use RO filtration to purify water.
15.	Greenery:	YES	Institute has maintained Greenery within campus
16.	Plantation: (trees and plants in campus)	NO	
17.	Plantation drive by the institute: (trees and plants outside campus)	NO	
18.	LED lights:	YES	Institute Uses LED lights many of the points
19.	Energy & environment monitoring systems	NO	
20.	Save energy posters	NO	
21.	Energy management	NO	
22.	Renewables (solar/wind)	YES	Institute has installed SPV GCRT
23.	Sensor based equipment	NO	
24.	Switch off posters	NO	
25.	Emergency contact numbers list:	NO	
26.	Health/medical facilities	NO	
27.	Critical safety parameters:	NO	
28.	Disaster management training	NO	
29.	Awareness, approach, Seminars	NO	
30.	Code of conducts, SOPs	NO	

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5. ENVIRONMENT AUDIT

5.1. Air Quality

POLLUTANTS	PM 2.5	PM 10	O3	CO	NO2	SO2
LIMIT	35	150	21	35	10	6
UNIT	$\mu\text{gm}/\text{m}^3$	$\mu\text{gm}/\text{m}^3$	$\mu\text{gm}/\text{m}^3$	$\mu\text{gm}/\text{m}^3$	$\mu\text{gm}/\text{m}^3$	$\mu\text{gm}/\text{m}^3$
VALUE	21	78	11	22	8	4
REMARK	AVERAGE	AVERAGE	AVERAGE	AVERAGE	AVERAGE	AVERAGE

5.2. Water Quality

5.2.1. Water Quality

Sr. No.	Category	Location	Quality			Usage
			TDS	PH	ORP	
1.	Municipal / Local Body Water Supply	NA	160	7.1	320	ALL PURPOSE
2.	Bore well	NA	NA	NA	NA	NA
3.	Open Well	NA	NA	NA	NA	NA
4.	Any other source	NA	NA	NA	NA	NA

5.2.2. Filtration

Institute use RO filtration to purify Drinking water.

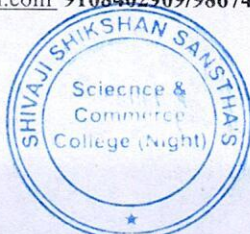
5.2.3. Water Balance

SL NO	HEAD	UNIT	QUANTITY
1	AVERAGE DAILY OCCUPANTS	NO	120
2	AVERAGE DAILY VISITORS	NO	08
3	WATER REQUIREMENT FOR OCCUPANTS	LPD	1800
4	WATER REQUIREMENT FOR VISITORS	LPD	80
5	TOTAL WATER REQUIREMENT	LPA	451000
6	INHOUSE WATER SOURCE	LPD	5000
7	OUTSOURCED WATER	LPD	0
8	HARVESTED RAIN WATER	LPA	0
9	SURPLUS/SHORTFALL WATER	LPA	40000

Note:

As per data provided by college

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5.3. Atmosphere

Sr. No.	BUILDING	LOCATION	Illumination		Temperature		Humidity		Noise level	
			LUX		°C		%		db	
1	GROUND FLOOR	INDOOR	140	OK	27	OK	50	OK	36	OK
2	GROUND FLOOR	OUTDOOR	155	OK	27	OK	50	OK	36	OK
3	FIRST FLOOR	INDOOR	125	OK	28	OK	55	OK	32	OK
4	FIRST FLOOR	OUTDOOR	172	OK	28	OK	55	OK	32	OK
5	SECOND FLOOR	INDOOR	140	OK	29	OK	52	OK	30	OK
6	SECOND FLOOR	OUTDOOR	160	OK	29	OK	52	OK	30	OK

5.4. Wastage Management

- Do the premises generate wastage?
YES-Minor
- What type of wastage and quantity is generated? What are actions taken on it?

Sr. No.	Wastage Type	Quantity	Action
1.	Biomass	NA	NA
2.	Paper	Non- Quantified	NA
3.	Water	Non- Quantified	NA
4.	E-Waste	Non- Quantified	NA
5.	Bio-Hazardous	NA	NA
6.	Fuel	NA	NA
7.	Production	NA	NA
8.	Process	NA	NA
9.	Food	NA	NA
10.	Man-Hours	NA	NA

3. Recycling Procedures

- Does Premises users aware about Recycle or Re-use of resources used?
NO
- Does institute run wastage and recycling awareness campaign for users?
NO
- Does institute have SOP for wastage and recycling procedures?
NO
- Does Premises Recycle or Re-use resources used?
NO

4. Wastage Recovery & Conservation

- Any Energy conservation method applied?
YES LED LIGHTS
- Any SOP on operation and maintenance is defined?
NO
- Any Energy conservation devices installed?
NO
- Any alternative Energy source is installed?
YES SPV GCRT

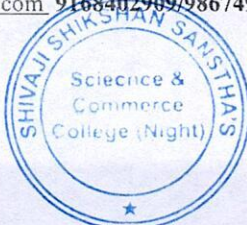
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- e. Does the SWITCH OFF Drills conducted regularly?
NO
- f. Are electronic and smart devices run on power saving mode? (computers, Etc)
NO
- g. Does electronic & other equipment run standby mode? How many hours?
NO
- h. Does institute perform Water quality monitoring?
NO
- i. Have you installed rain water harvesting system?
NO
- j. Any SOP on operation and maintenance of plumbing system is defined?
NO
- k. Any SOP on Water utilization is defined?
NO
- l. Does institute record water usage?
NO
- m. Are rooms well ventilated?
YES
- n. Does institute perform Air quality monitoring?
NO
- o. Any vehicles used? Type of Fuel? Quantity of fuel consumed?
NO
- p. Any third-party agreements for
 - i. E-waste Pick-up agreements
NO.
 - ii. Paper waste Pick-up agreements
NO
 - iii. Bio hazardous waste Pick-up agreements.
NA
 - iv. Chemical Pick-up agreements
NA

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5.5. Carbon Footprint

5.5.1. Emission

Impact		
Electricity Consumption	4885	KWh
Co2 Generated	5373.5	Kg

5.5.2. Sequestration

SI No	Method	Quantity	Saving
1	Trees	32	702.72
2	Recycling Papers	0	0
3	Solar	10000	11000
	TOTAL		11702.72

5.5.3. Observations

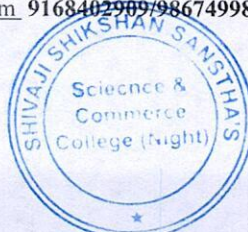
Carbon Footprint of Institute is 21.49 per person

Carbon Sequestration of Institute is 46.81 per person

5.5.4. Recommendations

Carbon Sequestration is observed Very Excellent.

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6. Recommendations

It is observed that Institute is profoundly lagging in Preservation of Data and Information; It is highly recommended that all the data regarding to any activity related to this audit; adhere before or henceforth; has to be maintained and preserved and updated periodically; by all means and efforts, with dedicated person, time, expenses and efforts. This has to be considered above all other recommendations and other documentation related recommendations mentioned in list below. The data given for audit is just to par the requirements and merely sufficient to conduct the process. It is also observed that Institute follows standards of Green Premises much below than standards; which has to be updated immediately with help of recommendations and other measures.

PART A GENERAL

1. It is recommended that institute shall prepare and maintain Plot map
2. It is recommended that institute shall prepare and maintain Building and floor map
3. It is recommended that institute shall prepare and maintain Roof/Terrace map
4. It is recommended that institute shall prepare and maintain Emergency evacuation Plan has to be prepared, preserved and made aware to occupants According to Point 1 to 3.
5. It is recommended that institute shall prepare and maintain Electrical SLD.
6. It is recommended that institute shall prepare and maintain Details Electrical Control Panels.
7. It is recommended that institute shall prepare and maintain Registers of Records
8. It is recommended that institute shall prepare and maintain Nameplate Data of all equipment
9. It is recommended that institute shall prepare and maintain Manuals of all equipment
10. It is recommended that institute shall preserve Electricity, Water and other utility bills.
11. It is recommended that institute shall prepare and maintain Log of Electrical works/accidents
12. It is recommended that institute shall provide safety equipments like Gloves, Shoes, Etc. for the workers.
13. It is recommended that Emergency evacuation plan to be prepared and displayed at centre place.
14. It is recommended that institute shall Install and maintain Fire Extinguishers and sand Buckets.

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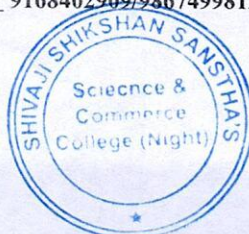
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15. It is recommended that institute shall prepare and maintain circulars, Records of Preventive measurements, Behavioral SOP, O & M SOPs, Danger Sign Boards and First Aid Kits.
16. It is recommended that institute to assign anybody responsible to maintain data regarding audits, management and recommendations since It is found that institute is lagging in data keeping.
17. It is recommended that institute shall undergo Energy and Green Audit Every two years.

PART B ENERGY AUDIT

1. It is recommended that to prepare feasibility and plan to replace regular fans with BLDC fans.
2. It is recommended that to prepare feasibility and plan to replace regular FTL with LEDs.
3. It is recommended that to undergo detail energy audit considering following points
 - a. All the connected loads in each room has to be listed down
 - b. All rooms working time has to be noted down.
 - c. Any extra activity such as program/function/gathering, Etc. has to be recorded in terms of connected load, extra load, running time.
 - d. Extra consumption in particular month and reason for the same.
 - e. Manual and remote monitoring of consumption.
4. It is recommended that to Clean Luminaries, Fans, ACs regularly to increase efficiency.
5. It is recommended that Prepare and observe SOPs for maintenance of equipments.
6. It is recommended that Following tests are to be conducted at-least annually
 - Neutral Current
 - Load Unbalance
 - Earth Resistance
 - Insulation Resistance
 - Illumination
 - Power Quality
 - Thermography

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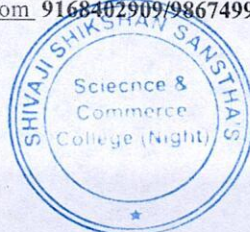
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PART C GREEN AUDIT

1. It is recommended that institute shall Put separate E-waste Collection box, e-waste has to be collected within and after achieving required quantity shall be given to recycling for approved and appropriate vendor.
2. It is recommended that institute shall Put separate Paper-waste Collection box, Paper-waste has to be collected within and after achieving required quantity shall be given to recycling for approved and appropriate vendor.
3. It is recommended that institute shall install composting plant for eating wastage.
4. It is recommended that institute shall use environment friendly cleaning agents to clean the premises.
5. It is recommended that Institute may implement biogas plant from sewage waste.
6. It is recommended that Institute practices waste management but efforts are scattered, institute shall implement Target oriented waste management system.
7. It is recommended that Institute to install Energy & environment monitoring systems
8. It is recommended that institute shall implement Target oriented Energy management system.
9. It is recommended that institute shall implement Sensor based lights in passage.
10. It is recommended that institute shall have available Medical officer or to be empanelled nearby physician for emergency support.
11. It is recommended that institute shall undertake electrical safety Audit.
12. It is recommended that institute shall designate people and they shall undergo Disaster Management Training.
13. It is recommended that Avoid Draft printing, use email/Whatsapp maximum.
14. It is recommended that institute shall prepare observe and undergo Code of conducts and Standard Operating Procedures for Energy, Green and Environment management system.
15. It is recommended that institute shall arrange Exhibitions and identification programs for students and locals to understand medicinal plants.
16. It is recommended that institute shall start a planting drive with students outside campus.
17. It is recommended that institute shall gift small plants or seeds/seed-balls to students leaving or going to native place and encourage them to plant at their own premises.
18. It is recommended that institute shall install & connect Rain water harvesting system to recharge groundwater.

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PART D ENVIRONMENT AUDIT

- i. It is recommended that institute shall maintain current trees. It is recommended that institute shall consider the scope to increase in Tree diversity; Plants like Tulsi, Camphora, Etc. can be planted for getting more pollution-free atmosphere. Also to increase the quality more greenery can be implemented. This can be done through gardening in empty places, terrace gardening and Green walls.
- ii. It is recommended that institute shall observe Quality from Filter output. To maintain the quality, water testing has to be done in every season (after every four months). A standard operating process has to be defined, documented and observed for tank and pipeline cleaning and maintenance.
- iii. It is recommended that institute shall quantify the output of Rain Water Harvesting System and increase the capacity to mitigate shortfall.
- iv. It is recommended that institute shall Install Meters to measure actual demand and usage of water.
- v. It is recommended that institute shall maintain accurate level, windows to be cleaned regularly, obstacles on windows to be moved, Proper capacity and efficiency of luminaries to be used and luminaries also to be cleaned once in a week.
- vi. It is recommended that institute shall make a MOU with E-waste recycling institute to recycle E-waste.
- vii. It is recommended that institute shall make a MOU with Paper waste recycling institute to recycle Paper waste.
- viii. It is recommended that institute shall measure and record wastage Data for all types of wastage generated.
- ix. It is recommended that institute shall Prepare, maintain and follow SOP for wastage and recycling.
- x. It is recommended that institute shall Prepare, maintain and follow SOP for all types of maintenance.

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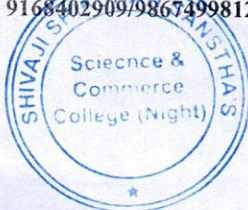
7. Disclaimer

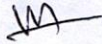
The report is generated from data, information, answer to asked questions, standards and procedures defined by different and concerned authorities time to time, available site condition, weather condition, operational and availability conditions provided by beneficiary on the day of survey. If any changes on above said measures on any other parameters affecting these measures may lead to change, alter, in-corrections even falsifying calculations, results, recommendations and suggestions. The values, figures, amounts mentioned are indicative to the site situation and condition; it may not reflect each and every aspect of it. The report is generated restricted to given scope and available conditions and measures.

8. Conclusion

We hereby conclude report for "Energy Audit, Green Audit and Environment Audit" of the Work done under scope of work for "SSS Science & Commerce College, Pant Nagar, Ghatkopar, Mumbai, Maharashtra" Please study it thoroughly and implement recommendations and suggestions at earliest.

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