



S.I.W.S.
N.R. SWAMY COLLEGE OF COMMERCE & ECONOMICS
AND
SMT. THIRUMALAI COLLEGE OF SCIENCE
WADALA MUMBAI-400031

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Report

On

Green, Energy & Environment Audit

For

S I W S College
Wadala


Prepared

By

Senergy Consultants Pvt Ltd
Mumbai



September – 2021



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Helping You to Conserve Energy

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I Introduction

Green, Energy & Environment Audit was undertaken at S I W S College , 337 Major R Parameshwaran Marg, Wadala West, Mumbai 400 031 during the month of September 2021.

The organization is very keen to promote green culture wherever possible, as a commitment towards better environment and conservation of energy. A lot of efforts have already been put up to bring down the carbon footprint. To further optimize consumption and identify saving opportunities, M/s SENERGY Consultants was assigned to carry out Green & Environment Audit of the premises.

This Audit Report presents the analysis of the data collected, observations made at the facility and is governed by the objectives, scope of work, methodology etc. discussed in the ensuing paragraphs.

Team:


The team members of the audit study.

- Mr. Ravindra Datar
- Mr. Nitesh Kharche
- Mr. Dharmendra Kumar Upadhyay

Acknowledgment:

We wish to express our gratitude towards Prof Neeta Khanolkar for having given us the opportunity for conducting the study and the support provided during the study.




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II

Executive Summary

The premises were evaluated against the various criterions laid down by the National Assessment and Accreditation Council (NAAC). The major observations are.

Renewable Energy

- The college has installed Roof-top Solar Photovoltaic System for self-use.
- The quantity of plate waste (organic waste with higher starch contents) is negligible, consequently, there is no potential for biogas generation. The plan has been proposed for installing Compost pit.

Green Campus Initiative

- The movement of vehicle inside the campus is restricted with vehicles of Special Dignitaries and VIP Guests are allowed to enter the campus.
- There is restriction on the usage of plastic, which may be extended to completely ban plastic usage inside the campus.
- The campus is surrounded with a lot of greenery, trees, and proper landscaping.
- The bicycles are allowed for in campus movement as required.

Environment & Energy Initiative

- The activities are limited due to COVID 19 pandemic.

Air Quality & Ventilation

- The classrooms and other area are well ventilated to ensure proper air quality.
- The fans are appropriately installed to ensure proper air circulation
- The indoor as well as outdoor plants have also been provided to improve the environment.

Lighting System

- The usage of natural light is optimized through well designed structure and windows.
- The switching of the lamps is done manually.

Water Quality & Conservation

- The water is supplied by the Municipal Corporation, which is a common practice in Mumbai & Navi Mumbai.
- Water purifiers & coolers are provided at convenient locations and on each floor.
- The distribution network and piping are more or less satisfactory and adequate.

Waste Management

- The effluent water is discharged in the common municipal drain, which is a common practice in and around Mumbai & Navi Mumbai.
- The organic waste is segregated and dispose of through Municipal waste.
- Due to pandemic, laboratories are closed because of which there is no generation of waste.
- The electronic gadgets / waste is either donated if useful or handed over to appropriate waste collectors.
- The general solid waste is disposed through municipal corporation.

Air Conditioning System

- The Air Conditioners are operated as required with manual control. The operation is minimal consequently automation may not be economical.
- The room temperature is maintained at 24 to 25 °C, which is well within the recommended values.
- The Air Conditioners are serviced regularly and properly maintained.
- Most of the Air Conditioners units are energy efficient with star rating of 3 and above.



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S I W S College**

Infrastructure usage

- Ramps are provided on the ground floor to address the needs of differently abled persons.
- The special toilets are available on the ground floor to address the needs of differently abled persons.
- The on-campus movement is distributed with multiple entrances as well as staircases.
- There are adequate fire extinguishers located at key areas. The college has initiated appropriate measures to meet the safety requirement.
- The draining system for washrooms is efficient and effective.
- No seepages were observed in the building premises.

Green IT culture

- The Energy efficient computers and laptops have been procured.
- The electronic communication is encouraged to minimize usage of papers.
- Most of the papers are reused for doubled sided printing to further minimize usage of paper.



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III Electrical System


Gadget List

Lamps:

the details are as below.

Location	TL	LED	Operation	
	40 W		Hr/D	D/M
Central Building				
First Floor				
CB-101	6	--	10	25
CB-102	4	2	10	25
CB-103	6	--	10	25
CB-104	6	--	10	25
CB-105	6	--	10	25
CB-106	6	--	10	25
CB-107	6	--	10	25
CB-108	6	--	10	25
CB-109	6	--	10	25
Second Floor				
CB-201	--	10	10	25
CB-202	--	10	10	25
CB-203	4	--	10	25
CB-204	4	--	10	25
CB-205	4	--	10	25
CB-206	3	1	10	25
CB-207	4	--	10	25
CB-208	4	--	10	25
Third Floor				
CB-301	4	--	10	25
CB-302	4	--	10	25
CB-303	3	1	10	25
CB-304	4	--	10	25
CB-305	4	--	10	25
CB-306	3	1	10	25
CB-307	4	--	10	25
Fourth Floor				
CB-401	4	--	10	25
CB-402	4	--	10	25
CB-403	4	--	10	25
CB-404	4	--	10	25
CB-406	4	--	10	25
CB-407	3	1	10	25
CB-408	4	--	10	25




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Location	TL	LED	Operation	
	40 W		Hr/D	D/M
Main Building				
First Floor				
MB-101	4	--	10	25
MB-102	6	--	10	25
MB-103	4	2	10	25
MB-104	4	--	10	25
MB-105	6	--	10	25
MB-106	5	2	10	25
MB-107	--	12	10	25
MB-108	3	1	10	25
MB-109	2	4	10	25
MB-110	--	2	10	25
MB-111	6	--	10	25
MB-112	6	--	10	25
MB-113	2	4	10	25
MB-114	--	6	10	25
MB-115	6	--	10	25
Second Floor				
MB-201	--	6	10	25
MB-202	--	4	10	25
MB-203	6	--	10	25
MB-204	5	--	10	25
MB-205	1	1	10	25
MB-206	5	--	10	25
MB-207	5	1	10	25
MB-208	2	--	10	25
MB-210	6	--	10	25
MB-211	5	1	10	25
MB-212	--	6	10	25
MB-213	3	--	10	25
MB-214	6	--	10	25
Third Floor				
MB-301	6	--	10	25
MB-302	6	--	10	25
MB-303	--	11	10	25
MB-304	2	4	10	25
MB-305	5	1	10	25
MB-306	6	--	10	25
MB-307	6	--	10	25
MB-308	6	--	10	25
MB-309	6	--	10	25
MB-310	6	--	10	25
Fourth Floor				
MB-401	4	1	10	25
MB-402	4	1	10	25
MB-403	5	1	10	25
MB-404	5	1	10	25



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Location	TL	LED	Operation	
	40 W		Hr/D	D/M
MB-405	5	1	10	25
MB-406	5	1	10	25
MB-407	2	--	10	25
MB-408	--	7	10	25
MB-409	4	1	10	25
Total	274	108		

LED Lamps:

After replacing the conventional tube lights with energy efficient LED tube lights, the economics of energy efficiency is as shown:

Description	Unit	TL
		40 W
Rating of the lamp	Watt	40
Rating of the switchgear	Watt	5
Power consumption of the lamp	Watt	45
Alternative Lamp: LED Lamp		
Rating of the lamp	Watt	18
Rating of the switchgear	Watt	2
Power consumption of the lamp	Watt	20
Controllable loss		
Loss	Watt	25
	% Present	56%
Saving Potential		
Number of TL lamps	No	274
Number of LED Lights		108
Cost of power	Rs/kWh	7.5
Operating Period	Hr/Day	10
	Day/Year	205
Energy Saving	kW	6.85
	kWh/Year	14043
	Rs/Year	105459
Economics		
Investment	Rs	137000
Payback period	Month	15.6

Computers:

Almost all the computers are with energy efficient LCD / LED monitors.

Fans:

All the fans are of standard rating and efficiency, the details are as below

Description	Rating	Quantity
	W	No
Ceiling Fans	70	318



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S I W S College**Air Conditioning Units:**

The Air Conditioning Units are with star rating of 3 and above, which are intrinsically operate at high energy efficiency, the details are as below.

Location	Type	Capacity	Quantity
Central Building			
First Floor			
CB-103	Window	1 Ton	2
CB-104	Window	1 Ton	2
CB-105	Window	1 Ton	1
CB-106	Window	1 Ton	1
Second Floor			
CB-201	Split	1.5 Ton	2
CB-202	Split	1.5 Ton	2
CB-208	Split	2 Ton	3
Main Building			
Ground Floor			
MB-03	Window	1 Ton	1
MB-04	Split AC	1.5 Ton	1
MB-05	Split AC	1.5 Ton	1
MB-06	Window	1 Ton	1
MB-07	Split AC	1.5 Ton	1
MB-08	Split AC	1.5 Ton	1
MB-09	Split AC	1 Ton	4
MB-10	Split AC	2 Ton	2
		1 Ton	3
Staff Room-107	Split	2 Ton	2

Observations & Suggestions:

- The fans may be progressively replaced with energy efficient BLDC fans, especially during replacements and new purchases.
- Most of the Air Conditioners units are energy efficient with star rating of 3 and above.
- The Air Conditioners are operated as required with manual control. The operation is minimal consequently automation may not be economical.
- The rooms are well ventilated and provided with fans at appropriate location for proper air circulation.
- The temperature is maintained at 24 to 25 °C for air conditioning spaces, which is within the recommended values.
- The gadgets are services properly and maintained in good condition.



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Electricity Bill:

Description	Unit	Jul-20	Aug-20	Sep-20	Oct-20	Feb-21	Mar-21	Apr-21	Average
Energy Consumption	KWH	2491	762	935	1329	1352	1628	1331	1404
Demand Charges	Rs	385	385	385	385	385	385	385	385
Bill	Rs	21530	6976	8454	11821	12017	14375	11676	12407
Cost	Rs/KWH	8.64	9.15	9.04	8.89	8.89	8.83	8.77	8.84

Description	Unit	Mar-20	Nov-20	Dec-20	Jan-21	Average
Energy Consumption	KWH	102	53.3	47.5	52.2	64
	KVARH (Lag)	631.3	672.6	870	678.9	713
	KVARH (Lead)	102.6	128.9	130	140.5	126
Power Factor (Lag)		0.952	0.976	0.984	0.984	0.974
Demand Charges	Rs	365	385	365	385	375
Bill	Rs	6470	4785	4256	4480	4998
Cost	Rs/KWH	63.43	89.77	89.61	85.82	78.40

Observations & Suggestions:

- The average cost of the power is around Rs 8.84/- per kWh, which is normal range for the school, colleges & commercial institutions. The actual demand as well as consumption is lower due lockdown restrictions. This is expected to be within the normal range, once the restrictions are lifted and activities are normalized.
- The power factor was also observed to be on the lower side which may be improved to avoid penalty also get incentive. The values may be maintained above 0.995 to achieve maximum incentive.

Power Factor Improvement:

The higher power factor entails substantial incentive and reduces maximum demand; while penalty is slapped if the power factor drops below 0.95.

The incentive is paid on the entire current bill amount including charges for energy, maximum demand, fuel adjustment charges (FAC) and reliability charges but excluding taxes and duties. The incentive structure for power factor is as under.

Sr No	Power factor	Power Factor Range	Incentive
1	0.96	0.955 to 0.964	0.5%
2	0.97	0.965 to 0.974	1.0%
3	0.98	0.975 to 0.984	1.5%
4	0.99	0.985 to 0.994	2.5%
5	1.00	0.995 to 1.000	3.5%

The penalty structure for power factor is as under.

Sr No	Power factor	Power Factor Range	Penalty
1	0.89	0.885 to 0.894	1.0%
2	0.88	0.875 to 0.884	1.5%
3	0.87	0.865 to 0.874	2.0%
4	0.86	0.855 to 0.864	2.5%
5	0.85	0.845 to 0.854	3.0%



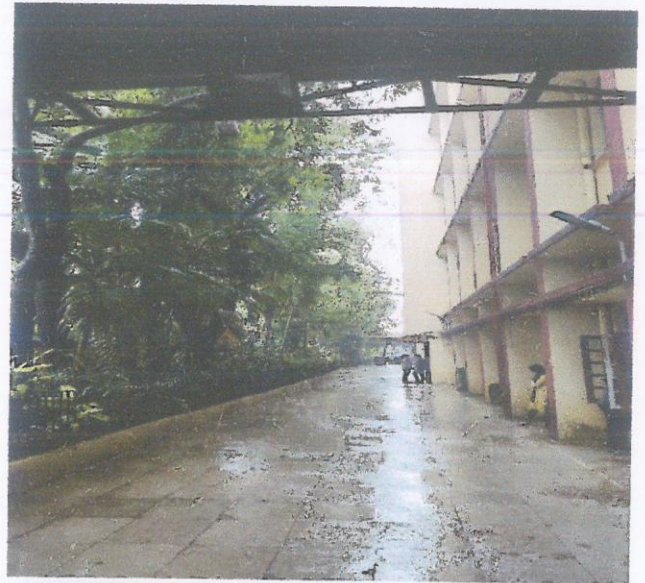
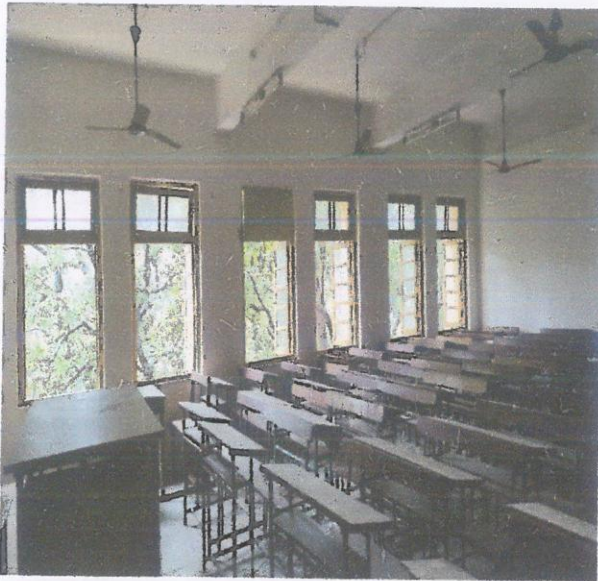
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IV Environmental System

Ventilation & Air Quality:

- The air ventilation is adequate.
- Several indoor & outdoor plants have been installed to improve air quality.
- It has been a general practice to switch off the fans & lights in an unoccupied area.



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V

Water Management

Consumption Pattern:

The water supplied by the municipal corporation is used for drinking and other requirements.

The incoming water from the municipal corporation is metered. The details are as under.

Period	Days	Consumption	Bill Amount	Cost
		KL	Rs	Rs/KL
Connection No- 15707				
Oct-19 to Jan-20	93	2444	21689.00	5.22
Jan-20 to Apr-20	91	2391	21218.00	5.22
Connection No- 1025001252				
Oct-19 to Jan-20	93	36	765.00	10.45
Jan-20 to Apr-20	91	36	765.00	10.45

The consumption pattern was analyzed by the water bills. There are about 2705 students and staff members. The specific water consumption was computed based on the number of persons and working days. The details are as under.

Period	Days	Consumption	Total No.	Water Consumption
		KL	Of Person	KL/Person/Day
Connection No- 15707				
Oct-19 to Jan-20	93	2444	6800	3.86
Jan-20 to Apr-20	91	2391	6800	3.86
Connection No- 1025001252				
Oct-19 to Jan-20	93	36	6800	0.06
Jan-20 to Apr-20	91	36	6800	0.06

The consumption is generally within the norms.

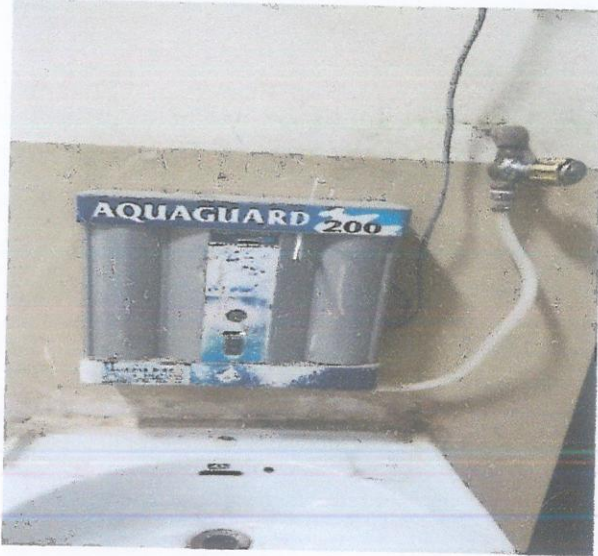


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Water Purifiers:

The water purifiers are installed on each floor.



Water Distribution System:

The distribution network and piping are more or less satisfactory and adequate.

Rainwater Harvesting:

The possibility of harvesting rainwater may be assessed.



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VI Waste Generation & Management

Solid Waste:


- The organic as well as inorganic waste is segregated in the college premises and disposed of through Municipal system.
- Each Floor is provided is with segregated dustbin for Recyclable waste and Non-Recyclable Waste
- The electronic gadgets with residual life are donated while the electronic waste is properly segregated and handed over to appropriate scrap collector.



Sewage & Wastewater:

- The sewage treatment plant is not required due to minimal generation of waste.




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VII Infrastructure & Safety

Movement on-campus (Distributed / non-distributed leading to crowds)

- The premises are provided with multiple staircases with necessary entrances to ensure quick and effective movement in normal as well as emergency conditions.
- The movement of vehicle inside the campus is restricted with vehicles of Special Dignitaries and VIP Guests are allowed to enter the campus.
- There are no pedestrian friendly pathways for in-campus movement
- There is restriction on the usage of plastic, which may be extended to completely ban plastic usage inside the campus.



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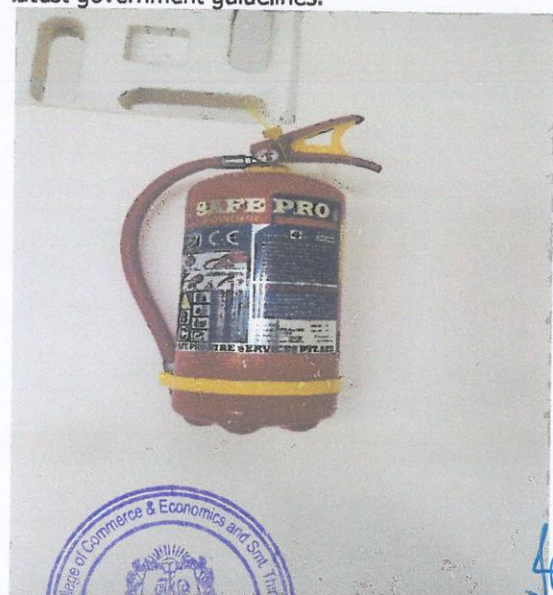
Parking space:

- There is adequate parking space for vehicles/four wheelers. However, almost all the students and many of the faculty members avail public transport system which is very convenient due to proximity to railway station and bus services.



Firefighting & fire escape system:

- There are efficient fire extinguishers in the premises, which are checked / refilled as per the stipulated frequency.
- The premise is provided with multiple staircases with requisite entrances to ensure quick and effective movement in emergency conditions.
- Water sprinkler system is provided on 7th floor as per latest government guidelines.



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S I W S College

Draining system:

- The drains from the washrooms are connected to the municipal drainage, which is a common practice in the colleges in and around Mumbai.

Seepage in the building:

- The premise was visually inspected for seepages. No seepages were observed in any of the places.



A handwritten signature in blue ink, appearing to be "Smt. Thirumalai".

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VIII Green Culture

- The LED / LCD monitors & Laptops has been procured, which are energy efficient.
- These monitors are not only energy efficient but also generate minimal heat and cut down on air conditioning load.
- The electronic communication is encouraged to minimize usage of papers.
- Most of the papers are reused for doubled sided printing to further minimize usage of paper.

The following steps may be initiated to further enhance efficiency of the systems.

1. An efficient power management system may be incorporated to
 - a. Switch off the display if not in use.
 - b. Put the computer in Sleep mode / switching off the machines, if not used for prolonged period.
2. Optimize brightness of the screen.
3. Discourage use of screen savers, which has similar power consumption.

Paper-less communication:

The major internal as well as external communication is through electronic medium.


Re-using one sided paper for printing:

It was observed that two side printing / printing on the back side of used paper in more than 80% of the cases.

Rainwater Harvesting:

The possibility of harvesting rainwater may be assessed.



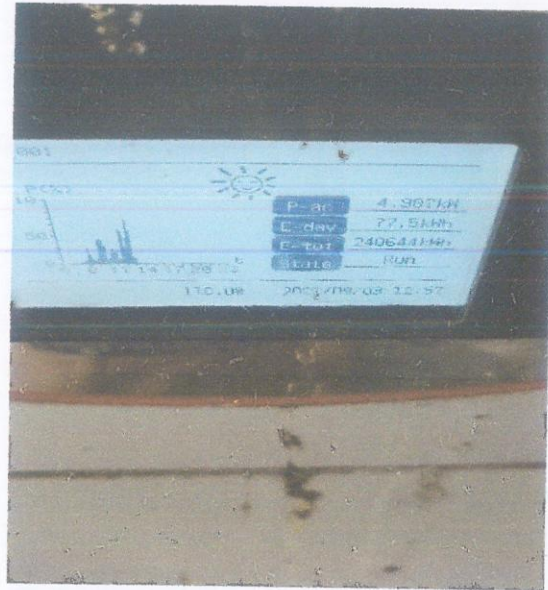
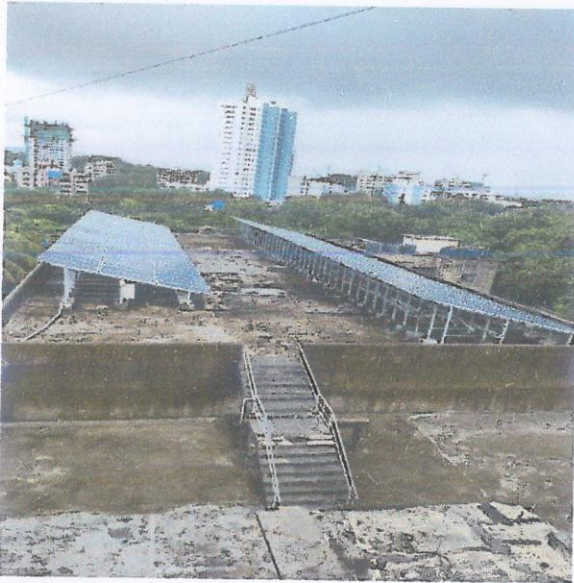

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IX Renewable Energy

Solar Photovoltaic:

- The organization has installed rooftop solar photovoltaic system on the terrace. The total installed capacity of solar energy system is 40 kW.
- The total solar power generation is 77.5 kWh for 3rd September 2021.



Solar Thermal:

There is no application of solar thermal system and does not find attractive in this case.

Biogas Plant:

There is no possibility of installing biogas plant for cooking as the quantity of plate waste is negligible.



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Renewable Energy

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- The quantity of plate waste (organic waste with higher starch contents) is negligible, consequently, there is no potential for biogas generation. The plan has been proposed for installing Compost pit.

Green Campus Initiative

- The movement of vehicle inside the campus is restricted with vehicles of Special Dignitaries and VIP Guests are allowed to enter the campus.
- There is restriction on the usage of plastic, which may be extended to completely ban plastic usage inside the campus.
- The campus is surrounded with a lot of greenery, trees, and proper landscaping.
- The bicycles are allowed for in campus movement as required.

Environment & Energy Initiative

- The college regularly undertakes cleaning drives and plantation activities.

Air Quality & Ventilation

- The classrooms and other area are well ventilated to ensure proper air quality.
- The fans are appropriately installed to ensure proper air circulation
- The indoor as well as outdoor plants have also been provided to improve the environment.

Lighting System

- The usage of natural light is optimized through well designed structure and windows.
- The switching of the lamps is done manually.

Water Quality & Conservation

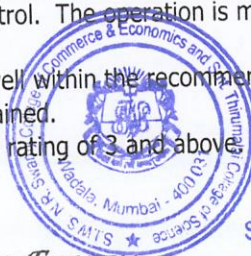
- The water is supplied by the Municipal Corporation, which is a common practice in Mumbai & Navi Mumbai.
- Water purifiers & coolers are provided at convenient locations and on each floor.
- The distribution network and piping are more or less satisfactory and adequate.

Waste Management

- The effluent water is discharged in the common municipal drain, which is a common practice in and around Mumbai & Navi Mumbai.
- The organic waste is segregated and disposed of through Municipal waste.
- The electronic gadgets / waste is either donated if useful or handed over to appropriate waste collectors.
- The general solid waste is disposed through municipal corporation.

Air Conditioning System

- The Air Conditioners are operated as required with manual control. The operation is minimal consequently automation may not be economical.
- The room temperature is maintained at 24 to 25 °C, which is well within the recommended values.
- The Air Conditioners are serviced regularly and properly maintained.
- Most of the Air Conditioners units are energy efficient with star rating of 3 and above.



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Infrastructure usage

- Ramps are provided on the ground floor to address the needs of differently abled persons.
- The special toilets are available on the ground floor to address the needs of differently abled persons.
- The on-campus movement is distributed with multiple entrances as well as staircases.
- There are adequate fire extinguishers located at key areas. The college has initiated appropriate measures to meet the safety requirement.
- The draining system for washrooms is efficient and effective.
- No seepages were observed in the building premises.

Green IT culture

- The Energy efficient computers and laptops have been procured.
- The electronic communication is encouraged to minimize usage of papers.
- Most of the papers are reused for doubled sided printing to further minimize usage of paper.



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III Electrical System


Gadget List

Lamps:

the details are as below.

Location	TL	Operation	
	40 W	Hr/D	D/M
Central Building			
First Floor			
CB-101	6	10	25
CB-102	6	10	25
CB-103	6	10	25
CB-104	6	10	25
CB-105	6	10	25
CB-106	6	10	25
CB-107	6	10	25
CB-108	6	10	25
CB-109	6	10	25
Second Floor			
CB-201	4	10	25
CB-202	4	10	25
CB-203	4	10	25
CB-204	4	10	25
CB-205	4	10	25
CB-206	4	10	25
CB-207	4	10	25
CB-208	4	10	25
Third Floor			
CB-301	4	10	25
CB-302	4	10	25
CB-303	4	10	25
CB-304	4	10	25
CB-305	4	10	25
CB-306	4	10	25
CB-307	4	10	25
Fourth Floor			
CB-401	4	10	25
CB-402	4	10	25
CB-403	4	10	25
CB-404	4	10	25
CB-406	4	10	25
CB-407	4	10	25
CB-408	4	10	25





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Location	TL		Operation	
	40 W	Hr/D	D/M	
Main Building				
First Floor				
MB-101	4	10	25	
MB-102	6	10	25	
MB-103	6	10	25	
MB-104	4	10	25	
MB-105	6	10	25	
MB-106	7	10	25	
MB-107	7	10	25	
MB-108	4	10	25	
MB-109	6	10	25	
MB-110	2	10	25	
MB-111	6	10	25	
MB-112	6	10	25	
MB-113	6	10	25	
MB-114	6	10	25	
MB-115	6	10	25	
Second Floor				
MB-201	4	10	25	
MB-202	4	10	25	
MB-203	6	10	25	
MB-204	5	10	25	
MB-205	2	10	25	
MB-206	5	10	25	
MB-207	6	10	25	
MB-208	2	10	25	
MB-210	6	10	25	
MB-211	6	10	25	
MB-212	6	10	25	
MB-213	3	10	25	
MB-214	6	10	25	
Third Floor				
MB-301	6	10	25	
MB-302	6	10	25	
MB-303	6	10	25	
MB-304	6	10	25	
MB-305	6	10	25	
MB-306	6	10	25	
MB-307	6	10	25	
MB-308	6	10	25	
MB-309	6	10	25	
MB-310	6	10	25	
Fourth Floor				
MB-401	5	10	25	
MB-402	5	10	25	
MB-403	6	10	25	
MB-404	6	10	25	




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Location	TL	Operation	
	40 W	Hr/D	D/M
MB-405	6	10	25
MB-406	6	10	25
MB-407	2	10	25
MB-408	6	10	25
MB-409	5	10	25
Total	382		

LED Lamps:

The possibility of replacing the conventional tube lights with energy efficient LED tube lights, the economics of which is as under.

Description	Unit	TL
		40 W
Rating of the lamp	Watt	40
Rating of the switchgear	Watt	5
Power consumption of the lamp	Watt	45
Alternative Lamp: LED Lamp		
Rating of the lamp	Watt	18
Rating of the switchgear	Watt	2
Power consumption of the lamp	Watt	20
Controllable loss		
Loss	Watt	25
	% Present	56%
Saving Potential		
Number of lamps	No	382
Cost of power	Rs/kWh	7.5
Operating Period	Hr/Day	10
	Day/Year	205
Energy Saving	kW	9.55
	kWh/Year	19578
	Rs/Year	147027
Economics		
Investment	Rs	191000
Payback period	Month	15.6

Computers:

Almost all the computers are with energy efficient LCD / LED monitors.

Fans:

All the fans are of standard rating and efficiency, the details are as below.

Description	Rating	Quantity
	W	No
Ceiling Fans	70	328

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Green, Energy and Environment Audit Report
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The Air Conditioning Units are with star rating of 3 and above, which are intrinsically operate at high energy efficiency, the details are as below.

Location	Type	Capacity	Quantity
Central Building			
First Floor			
CB-103	Window	1 Ton	2
CB-104	Window	1 Ton	2
CB-105	Window	1 Ton	1
CB-106	Window	1 Ton	1
Second Floor			
CB-201	Split	1.5 Ton	2
CB-202	Split	1.5 Ton	2
CB-208	Split	2 Ton	3
Main Building			
Ground Floor			
MB-03	Window	1 Ton	1
MB-04	Split AC	1.5 Ton	1
MB-05	Split AC	1.5 Ton	1
MB-06	Window	1 Ton	1
MB-07	Split AC	1.5 Ton	1
MB-08	Split AC	1.5 Ton	1
MB-09	Window	1 Ton	2
MB-10	Split AC	1.5 Ton	1
Staff Room-107	Split	1.5 Ton	3

Observations & Suggestions:

- The fans may be progressively replaced with energy efficient BLDC fans, especially during replacements and new purchases.
- Most of the Air Conditioners units are energy efficient with star rating of 3 and above.
- The Air Conditioners are operated as required with manual control. The operation is minimal consequently automation may not be economical.
- The rooms are well ventilated and provided with fans at appropriate location for proper air circulation.
- The temperature is maintained at 24 to 25 °C for air conditioning spaces, which is within the recommended values.
- The gadgets are services properly and maintained in good condition.



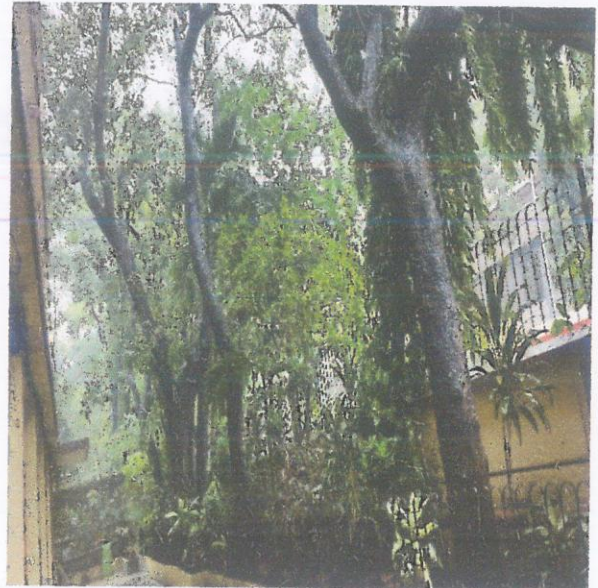
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IV Environmental System

Ventilation & Air Quality:

- The air ventilation is adequate.
- Several indoor & outdoor plants have been installed to improve air quality.
- It has been a general practice to switch off the fans & lights in an unoccupied area.




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V Water Management

Consumption Pattern:

The water supplied by the municipal corporation is used for drinking and other requirements.

The incoming water from the municipal corporation is metered, the data for which may be gathered and analyzed

Water Purifiers:

The water purifiers are installed on each floor.

Water Distribution System:

The distribution network and piping are more or less satisfactory and adequate.

Rainwater Harvesting:

The possibility of harvesting rainwater may be assessed.



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VI Waste Generation & Management


Solid Waste:

- The organic as well as inorganic waste is segregated in the college premises and disposed of through Municipal system.
- Each Floor is provided is with segregated dustbin for Recyclable waste and Non-Recyclable Waste
- The electronic gadgets with residual life are donated while the electronic waste is properly segregated and handed over to appropriate scrap collector.

Sewage & Wastewater:

- The sewage treatment plant is not required due to minimal generation of waste.




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VII Infrastructure & Safety

Movement on-campus (Distributed / non-distributed leading to crowds)

- The premises are provided with multiple staircases with necessary entrances to ensure quick and effective movement in normal as well as emergency conditions.
- The movement of vehicle inside the campus is restricted with vehicles of Special Dignitaries and VIP Guests are allowed to enter the campus.
- There are no pedestrian friendly pathways for in-campus movement
- There is restriction on the usage of plastic, which may be extended to completely ban plastic usage inside the campus.



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Parking space:

- There is adequate parking space for vehicles/four wheelers. However, almost all the students and many of the faculty members avail public transport system which is very convenient due to proximity to railway station and bus services.

Firefighting & fire escape system:

- There are efficient fire extinguishers in the premises, which are checked / refilled as per the stipulated frequency.
- The premise is provided with multiple staircases with requisite entrances to ensure quick and effective movement in emergency conditions.

Draining system:

- The drains from the washrooms are connected to the municipal drainage, which is a common practice in the colleges in and around Mumbai.

Seepage in the building:

- The premise was visually inspected for seepages. No seepages were observed in any of the places.



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VIII Green Culture

- The LED / LCD monitors & Laptops has been procured, which are energy efficient.
- These monitors are not only energy efficient but also generate minimal heat and cut down on air conditioning load.
- The electronic communication is encouraged to minimize usage of papers.
- Most of the papers are reused for doubled sided printing to further minimize usage of paper.

The following steps may be initiated to further enhance efficiency of the systems.

1. An efficient power management system may be incorporated to
 - a. Switch off the display if not in use.
 - b. Put the computer in Sleep mode / switching off the machines, if not used for prolonged period.
2. Optimize brightness of the screen.
3. Discourage use of screen savers, which has similar power consumption.

Paper-less communication:

The major internal as well as external communication is through electronic medium.


Re-using one sided paper for printing:

It was observed that two side printing / printing on the back side of used paper in more than 80% of the cases.

Rainwater Harvesting:

The possibility of harvesting rainwater may be assessed.




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IX Renewable Energy

Solar Photovoltaic:

The possibility of installing rooftop solar photovoltaic system on the terrace is being assessed.

Solar Thermal:

There is no application of solar thermal system and does not find attractive in this case.

Biogas Plant:

There is no possibility of installing biogas plant for cooking as the quantity of plate waste is negligible.



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