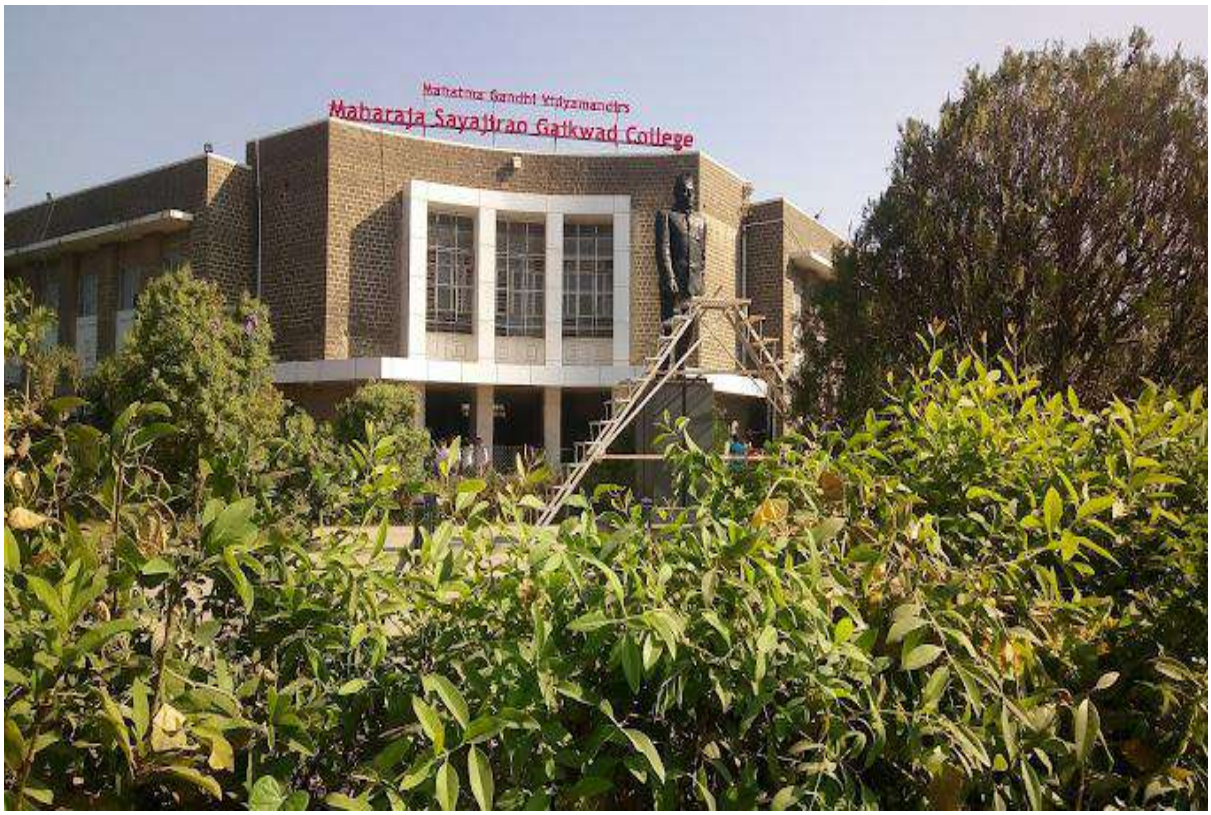
COMPREHENSIVE ENERGY AUDIT REPORT

FOR

MAHATMA GANDHI VIDYAMANDIR'S

M.S.G. COLLEGE MALEGAON CAMP, MALEGAON. DIST. NASHIK.



DATE OF AUDIT—Dec.8, 2022.

AUDIT CARRIED OUT BY—

MM Consultancy Services, Nashik.

INTRODUCTION.

M.S.G Arts, Science & Commerce college is situated in Malegaon Camp, Dist. Nashik in Maharashtra state of India. Established in 1959, MSGASCC is a Private college. The college is accredited by UGC, AICTE. M.S.G Arts, Science & Commerce college offers 40 courses across 7 streams namely Arts, Science, Commerce and Banking, Law, IT. Popular degrees offered at M.S.G Arts, Science & Commerce college include BA, B.Com, BSc, BBA, BCA. Besides a robust teaching pedagogy, M.S.G Arts, Science & Commerce college is also a leader in research and innovation. Focus is given to activities beyond academics at M.S.G Arts, Science & Commerce college, which is evident from its infrastructure, extracurricular activities and national & international collaborations. The placement at M.S.G Arts, Science & Commerce college is varied, with recruitment options both incorporates and public sector as well as entrepreneurship.

The main object of the institute is to provide quality education to enhance individual performance and elevate professional standards through innovative training programs in varied disciplines, research and extension activities.

M.S.G. Arts, Science and Commerce College has established itself as an institute of great repute in the area of ARTS/SCIENCE/ENGINEERING/ LAW ETC. Join us in building a successful partnership in carving a great future and embark on a fascinating journey with M.S.G. Arts, Science and Commerce College

ACKNOWLEDGEMENT.

MM Consultancy Services Nashik is grateful to the Principal Shri S.N. Nikam Sir & Management of Mahatma Gandhi Vidya Mandir Trust M.S.G. College, Malegaon Camp, Malegaon dist. Nashik for giving us an opportunity to carry out a detailed energy audit of their complex to identify potential for energy saving in their complex to optimize energy consumption & energy cost.

Energy Management & Energy Conservation have gained utmost importance today for education institutions as energy costs are on rising day by day & therefore efficient energy management is the need of the hour. Apart from energy savings, energy conservation leads to reduction in Greenhouse gas emissions which improves our environment to protect our planet earth from drastic climate changes & overall natural disturbance. We really appreciate the mission & vision of Shri Apurva Hiray & his team to acknowledge the importance of energy & environment upgrades for sustainable development for present & future generation.

National Assessment & Accreditation Council (NAAC) has also emphasized energy conservation & environment protection for educational institutions by providing an adequate platform for accreditation & Rating to encourage them for special efforts for these noble causes. Needless to say, our present & future generation can survive only if sufficient weightage & importance is given from our end to upgrade our present systems more in line with Nature & natural processes.

We are also grateful to Shri Rahul Jagtap for necessary tech. inputs & proper co-operation provided for audit. Without Rahul's Initiative & urgency, this audit could not be successful & transparent for a healthy reference. It may be noted that our audit is not fault finding exercise but is intended to bring about continual improvements in your college campus for the benefits of all of us incl. our future generation.

Our Sincere thanks to Shri Kishore kumar Ingale, Estate Manager who provided us with adequate data & tech. information to make this audit successful.

ENERGY SCENARIO.

M.S.G. College Campus is having electricity supply from MSEB Grid with Nine feeders which meet the power requirement of various sections/departments. Each connection is having a unique consumer Number with a separate meter & campus therefore handles nine separate bills every month for the whole complex. Only one consumer receives three phase LT supply from 11 KV MSEB feeder while others receive single phase LT Supply. Power supply Tariff structure & consumer details are indicated in the following Table.

TABLE-1. Electricity Tariff Structure			
Consumer No.	Meter No.	phase	Tariff
		3/1	Details
		HT/LT	connected L
65510311218	1	3	88LT-VII B I
		LT	30 kw
65510311234	2	1	073/LT VII(B)
		LT	2 kw
65510311242	3	1	073/LT VII(B)
		LT	2 kw
65510311323	4	1	073/LT VII(B)
		LT	2 kw
65510311331	5	1	073/LT VII(B)
		LT	5 kw
65510311340	6	1	073/LT VII(B)
		LT	2 kw
65510311404	7	1	073/LT VII(B)
		LT	10 kw
65510510423	8	1	052/LT II comm
		LT	3 kw/7.18/427
65510311315	9	1	073/LT VII(B)
		LT	7 kw/4.57/384

While all consumers are charged energy charges as per industrial tariff but electricity duty is charged as per commercial tariff structure which should be looked into by college management. This is highlighted in above Table with yellow color.

Electricity Bills analysis is summarized in following Table Consumer wise.

TABLE-2

M.S.G. College, Malegaon.						Electricity Consumption Consumer/Meter wise					
Months	Meter	Meter	Meter	Meter	Meter	Meter	Meter	Meter	Meter	TOTAL	Unit
	No.1	No.2	No.3	No.4	No.5	No.6	No.7	No.8	No.9	1 to 9	Cost
	Kwh/ Bill	Kwh/ Bill	Kwh/ Bill	Kwh/Bill	Kwh/Bill	Kwh/ Bill	Kwh/ Bill	Kwh/ Bill	Kwh/ Bill	Kwh/ Bill	Rs/Kwh
Nov-22		2269	280	58	42	497	96	203	2004	5449	
		19629	2867	962	822	4697	1291	3028	19286	52582	9.65
Oct-22	1131	27229	1122	227	176	427	90	270	423	31095	
	19261	204319	7110	1627	2873	4097	1236	3817	4067	248407	7.99
Sep-22	2750	124	462	90	8	446	121	414	423	4838	
	39394	1511	4365	1224	532	4231	1487	5514	4036	62294	12.88
Aug-22	1283	124	462	74	8	413	78	423	423	3288	
	21160	1512	4365	1089	532	3951	1124	5623	4036	43392	13.20
Jul-22	1335	124	462	113	12	551	99	378	423	3497	
	21903	1512	4372	1420	566	5139	1303	5090	4035	45340	12.97
Jun-22	2347	124	372	249	3	986	94	290	364	4829	
	34506	1399	3268	1469	487	7894	1174	3597	3207	57001	11.80
May-22	2320	124	616	58	9	1142	108	338	482	5197	
	30665	1399	5106	910	532	9070	1278	4106	4096	57162	11.00
Apr-22	3220	124	397	58	15	1063	62	320	423	5682	
	40397	1410	3484	903	574	8592	933	3954	3696	63943	11.25
Mar-22	1023	125	293	46	5	681	56	256	272	2757	
	16578	1398	2655	803	492	5627	876	3232	2520	34181	12.40
Feb-22	2166	124	201	62	12	677	2836	275	288	6641	
	28525	1385	1964	918	542	5548	51235	3404	2619	96140	14.48
Jan-22	2318	124	2012	66	15	665	75	268	301	5844	
	30147	1399	19625	961	574	5658	1030	3362	2751	65507	11.21
Dec-21	430	124	169	503	106	6739	75	1272	2296	11714	
	10003	1396	1729	7850	4858	55692	1019	17927	21367	121841	10.40
Nov-21	1352										
	19840										

TABLE-3.

Annual Power consumption of all the consumers is shown in the following Table-

Month wise.

Annual Consumption & Cost.		
Months	**Bill-Rs.**	**Units/Kwh**
	N0. 1 to 9	**No.1 to 9**
Nov-22	**52582**	**5449**
Oct-22	**248407**	**31095**
Sep-22	**62294**	**4838**
Aug-22	**43392**	**3288**
Jul-22	**45340**	**3497**
Jun-22	**57001**	**4829**
May-22	**57162**	**5197**
Apr-22	**63943**	**5682**
Mar-22	**34181**	**2757**
Feb-22	**96140**	**6641**
Jan-22	**65507**	**5844**
Dec-21	**121841**	**11714**
Nov-21	**19840**	**1352**
Total	**967630**	**92183**
Unit Cost	**Rs/Kwh**	**10.50**

Total Annual power Consumption of the campus is 92183 units (Kwh)

Total payment to MSEB for above consumption is Rs. 967630.

Unit cost of electricity used is estimated at Rs. 10.50 per Unit/Kwh.

It is recommended to have only one power supply in the complex from MSEB with one dedicated meter to avoid present complications & energy losses. In addition, huge paperwork & payment procedures can be eliminated with better control with the one consumer arrangement with MSEB.

Typical Consumer Bill Analysis for having load above 20 Kw is shown in the following Table. There is only one consumer in this category & the various tech. parameters are indicated as under—

TABLE-4

Consumer No. 065510311218 Electricity Bill Analysis

Months	CD-Kva	40 % CD	ABD Kva	BD-Kva	Diff.Kva	Rs/Kva	Addl. Charges	PF
Oct-22	30	12	14	12	2	384		0.95
Sep-22	30	12	16	12	4	384		0.97
Aug-22	30	12	13	12	1	384		0.94
Jul-22	30	12	10	12	-2	384	-768	0.95
Jun-22	30	12	15	12	3	384		--
May-22	30	12	4	12	-8	373	-2984	--
Apr-22	30	12	16	12	4	373		--
Mar-22	30	12	7	12	-5	373	-1865	--
Feb-22	30	12	12	12	0	373		--
Jan-22	30	12	2	12	-10	373	-3730	--
Dec-21	30	12	6	12		373		--
Nov-21	30	12	6	12		373		--
							-9347	

Power factor improvement to 0.995 level is recommended to reduce present power consumption by min. 1 Lac Rs per year. Automatic power factor controller may be installed to maintain the power factor at optimum level This is more relevant as MSEB shall be charging energy on Kvah from April 2023 which would save further with optimization of power factor.

Solar Power generation analysis is presented in the following Table—

TABLE-5	SOLAR POWER GENERATION ANALYSIS					
Months	Import	Export	Solar Generation	Standard Solar	Final Billing	Difference
	Units	Units	Units--A	Generation--B	Units	(B-A)
Nov-22						
Oct-22	1515	384	1204	1200	1131	--
Sep-22	2750	0	178	1200	2750	1022
Aug-22	1425	141	842	1200	1283	358
Jul-22	1449	114	674	1200	1335	526
Jun-22	2351	4	6	1200	2347	1194
May-22	2320	0	0	1200	2320	1200
Apr-22	3380	160	700	1200	3220	500
Mar-22	1164	142	942	1200	1023	258
Feb-22	2167	0	0	1200	2167	1200
Jan-22	2318	0	0	1200	2318	1200
Dec-21	430	0	0	1200	430	1200
Nov-21	1352	0	394	1200	1352	806
TOTAL	22621	945	4940	14400	21676	9464
Shortfall in generation					9460	Units
Shortfall in Export					3995	Units
Total shortfall					13455	Units
Total Annual Loss per year @ Rs.10.50 per Kwh					141278	Rs.

Comments—

- 10 Kw solar plant is supposed to generate minimum 1200 units per month as per design standard (400 units per day)
- Present solar power generation is much less & shortfall is of 9460 units per year.
- There is no proper export of solar power generated to the MSEB Grid & there is a shortfall of 3995 Units per year as indicated in above Table.
- There is a total shortfall of 13455 Units per year resulting in a cumulative loss of Rs. 139663 per year.
- State Govt. Subsidy for solar power generation is not availed by the campus, which is available now.
- It is important to optimize present solar power generation as well as 100 % export to GRID to avail full credit in import power to cut down power cost.

Benefits of Roof Top Solar System.

- Rooftop solar is a great step toward combatting climate change
- Solar panels contribute to the “green economy”
- Solar power is incredibly efficient
- It can be installed quickly
- Solar energy requires minimal maintenance
- Solar panels have zero emissions.

What’s more, solar power operates silently and there is no need for costly transmission infrastructure.

So what are the advantages of rooftop solar panels vs. ground-mounted panels? While each has pros and cons, the benefits of rooftop solar power are hard to ignore.

Homeowners Benefit from Rooftop Solar Panels

As one of the most affordable types of solar products on the market, it’s not surprising that rooftop panels represented over 72 percent of all power added in the United States in 2013. The systems are proven to enhance a property’s green credentials, and home resiliency. Solar panels can even add thousands of dollars to a home’s resale value.

Existing electrical load details in the campus are presented in the following Table with wattage, Numbers, usage & annualized consumption/cost.

TABLE-6 Present Electrical Load Details

Load	Nos	Watts	Hrs/day	Working days-year	Annual Consum. Kwh	Av.Rate Rs/Kwh	Bill - Rs.	Possible Savings @50%
Computers	211	--	4	250	--	10.50	--	
Printers	60	--	2	250	--	10.50	--	
Fans	540	65	4	100	14040	10.50	147420	73710
Ovens	20	--	0.5	100	--	10.50	--	
Tube Lights	708	20	4	250	14160	10.50	148680	74340
AC	5	--	--	--	--	--	--	
Borewells	3	750	4	250	2250	10.50		
Water pump	4	750	2	250	1500	10.50	15750	
MV Lamps	10	450	8	250	9000	10.50	94500	47250
Total					40950		406350	195300
Annual Bill					92183		967630	
% age					44.42		41.99	20.18

Present Lighting & Fans can be replaced with energy efficient LED lights & energy efficient fans which can result in annualized cost savings of Rs. 195300 which is estimated @ 25% of present energy bill.

Annualized cost savings of Rs.141278 is possible through improved performance of present solar power plant with proper export arrangement with MSEB.

Total estimated savings of Rs. 336578 can be achieved through above energy saving measures which needs to be implemented.

ENERGY SAVING TIPS

The light-emitting diode (LED) is today's most energy-efficient and rapidly-developing lighting technology. Quality LED light bulbs last longer, are more durable, and offer comparable or better light quality than other types of lighting. Check out the **top 8 things you didn't know about LEDs** to learn more.

Energy Savings

LED is a highly energy-efficient lighting technology, and has the potential to fundamentally change the future of lighting in the United States. Residential LEDs -- especially ENERGY STAR rated products -- use at least 75% less energy, and last up to 25 times longer, than incandescent lighting.

Widespread use of LED lighting has a large potential impact on energy savings in the United States. By 2035, the majority of lighting installations are anticipated to use LED technology, and energy savings from LED lighting could top 569 TWh annually by 2035, equal to the annual energy output of more than 92 1,000 MW power plants.

How LEDs are Different

LED lighting is very different from other lighting types such as incandescent and CFL. Key differences include:

- Light Source: LEDs are the size of a fleck of pepper, and can emit light in a range of colors. A mix of red, green, and blue LEDs is sometimes used to make white light.
- Direction: LEDs emit light in a specific direction, reducing the need for reflectors and diffusers that can trap light. This feature makes LEDs more efficient for many uses such as recessed downlights and task lighting. With other types of lighting, the light must be reflected to the desired direction and more than half of the light may never leave the fixture.

- Heat: LEDs emit very little heat. In comparison, incandescent bulbs release 90% of their energy as heat and CFLs release about 80% of their energy as heat.
- Lifetime: LED lighting products typically last much longer than other lighting types. A good quality LED bulb can last 3 to 5 times longer than a CFL and 30 times longer than an incandescent bulb.

LED Products

LED lighting is available in a wide variety of home and industrial products, and the list is growing every year. The rapid development of LED technology has resulted in increased product availability, improved manufacturing efficiency, and lower prices. Below are some of the most common types of LED products.

Industrial and Commercial Lighting

The high efficiency and directional nature of LEDs makes them ideal for many industrial uses. LEDs are increasingly common in street lights, parking garage lighting, walkway and other outdoor area lighting, refrigerated case lighting, modular lighting, and task lighting.

Under-Cabinet Lighting

Because LEDs are small and directional, they are ideal for lighting tight spaces such as countertops for cooking and reading recipes. Since there can be variation in light color and directionality, it is important to compare products to find the best fixture for your space.

Recessed Downlights

Recessed downlights are commonly used in residential kitchens, hallways, and bathrooms, and in a number of office and commercial settings. DOE estimates there are more than 600 million recessed downlights installed in U.S. homes and businesses.

LED Replacement Bulbs

With performance improvements and dropping prices, LED lamps can affordably and effectively replace 40, 60, 75, and even 100 Watt incandescent bulbs. It's important to read the Lighting Facts Label to make sure the product is the right brightness and color for its intended use and location.

LED Holiday Lights

LEDs consume far less electricity than incandescent bulbs, and decorative LED light strings such as Christmas tree lights are no different. Not only do LED holiday lights consume less electricity, they also have the following advantages:

- Safer: LEDs are much cooler than incandescent lights, reducing the risk of combustion or burnt fingers.
- Sturdier: LEDs are made with epoxy lenses, not glass, and are much more resistant to breakage.
- Longer lasting: The same LED string could still be in use 40 holiday seasons from now.
- Easier to install: Up to 25 strings of LEDs can be connected end-to-end without overloading a wall socket.

ENERGY EFFICIENT FANS.

Ceiling fans are not just a fixture but a major home appliance in India. It is used around the clock for the majority of the year. This causes a huge amount of energy consumption by ceiling fans at the residential level itself. Due to rising environmental concerns and issues evoked in creation of energy, there is a need for conservation of energy and available resources for power generation.

BLDC Infographic explains What is BLDC Motor technology and its top benefits Crompton has introduced the Active BLDC technology in their ceiling fans. This advanced technology has been a boon to consumers as it not only helps reduce energy consumption but also reduced your electricity bill. BLDC motor stands for Brushless Direct Current Motor and as the name suggests, it works on direct current electricity. BLDC motor uses permanent magnets, instead of electromagnets that are used in conventional motors. The permanent magnets of BLDC motor have less energy and heat losses compared to electromagnets. This motor converts the input of alternate current into direct current, and hence this technology works smoothly even at low voltage or power fluctuations. The technology of Active BLDC motor adds an advance mechanical feature to your regular ceiling fan and changes it to a modern appliance to merge with the smart homes of today. Alongside, it brings you a great deal as it reduces your energy consumption by up to 50%.

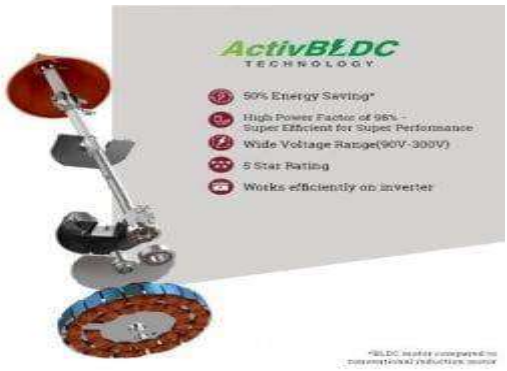
BLDC Fans vs Normal Fans

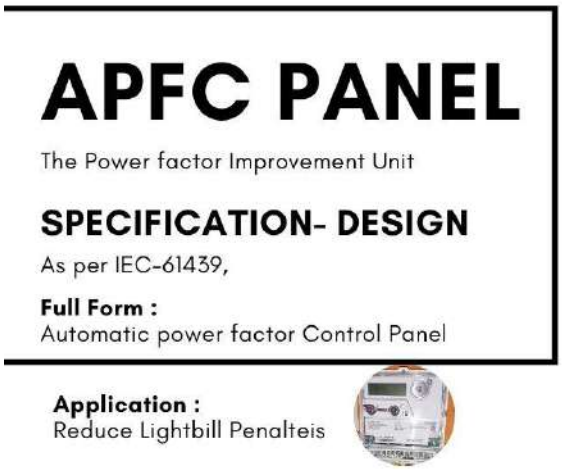
Calculate your savings on BLDC fans here

As compared to a conventional ceiling fan, a ceiling fan with ActivBLDC technology can generate the same amount of airflow with less energy usage and better power factor Hence ceiling fans with Active BLDC motors are energy-efficient and give better energy outputs.

Energy Efficient Fans run on Active BLDC motors. BLDC motor fans consume approximately half the power of a traditional motor fans use Active BLDC technology which operates on wide voltage range from 90V-300V.It is observed that a conventional fan's electricity bill comes up to ₹ 2850 annually per fan whereas fans with Active BLDC technology have an electric bill of just of ₹1350, thus saving ₹1500. Also, for 4 fans in a home the saving is ₹6000.This great saving is only possible due to Active BLDC technology.

While using ceiling fans made with Active BLDC technology, these ceiling fans bring an advance touch to your living. They are available in various colours, come with great design, and are equipped with other high-tech features like superior air delivery, smart remote, sleep timer and 5-year warranty, etc. It not only gives you a great opportunity to cut down on your energy usage but also shows a great reduction in your monthly electricity bill.





Function of APFC panel is improve the power factor. Most of the electric load is reactive, resulting in poor power factor. Companies distributing electricity encourage consumers to improve power factor. For improving power factor, electricity consumers have to connect

capacitors of optimum rating across inductive load. APFC is an automatic power factor electrical device which is employed to boost the ability factor, whenever required, by switching ON and OFF the desired capacitor bank units automatically.

APFC Panel has microcontroller based programmable controller which switches the capacitor banks of suitable capacity automatically in multiple stages by directly reading the reactive load (RKVA) which works in the principle of VAR sensing tends to keep up the

PF to 0.99 Lag. APFC Relay - Automatic Power Factor Controller Relay. Low Power Factor - Harms. In industries we've differing kinds of loads viz. resistive, inductive & capacitive. To improve the facility factor it's required to attach a hard and fast capacitor or capacitor bank at the LT side of the Transformer. For approximate KVAr of capacitors required. If the installation has various small loads with the mixture of huge loads then the APFC should be recommended.

APFC panel also known as automatic power factor improvement Panel because, it can control the power factor for reactive loads. Similarly they are designed as per IS standard IS 8623, IEC 60529. In addition, APFC panels provide high quality and reliability.

RTPFC or APFC mainly used for improvement of PF up to 0.999 or Unity. Everybody knows that how much costly electrical bills. In Conclusion, Function of APFC panel is best quality power factor control Panels with best calculation support also design of panel and provide control drawing for APFC Panel

All the ACCU-APFC with metal clad, totally enclosed, rigid, floor mounted, air -insulated, cubical type suitable for operation on three phase / single phase,415 or 230 volts, 50 Hz. Power control centre panel have designed for minimum expected ambient temperature of 45 degrees Celsius. Also, 80 percent humidity and dusty weather.

Tips For Energy Savings in Computers-

Unplug your computer when not in use

When you're not using your computer, it's best to shut it down and unplug it. This is because a plugged-in PC — even when switched off — still consumes standby power.

2. Disconnect external devices

When they're connected to your PC, devices such as printers, headphones, and webcams consume power even when they're not in use. This is why you should disconnect or remove external devices from your PC once you're done using them.

3. Alternatively, use a smart strip, especially for computers you cannot turn off

A smart strip is a series of several electrical outlets in one strip, with circuits to monitor and maximize your gadgets' power consumption. It can electronically unplug any device so that they stop drawing current, which saves energy. By connecting your PC and peripherals (e.g., printers, scanners) to the smart strip, you won't need to unplug your equipment when you're not using them.

4. Adjust your computer's energy settings

Adjusting your PC's power settings will help you consume less energy. For example, you can opt to put your hard drive and monitor into sleep mode when they're left idle for a few minutes. Lowering the brightness of your screen also saves electricity.

5. Use a charger only when your laptop is charging

When we charge our laptops, we tend to forget about them, leaving them plugged in for hours. Unfortunately, overcharging degrades the battery over time. Leaving the charger plugged in — even if it's not connected to your computer — also consumes standby power.

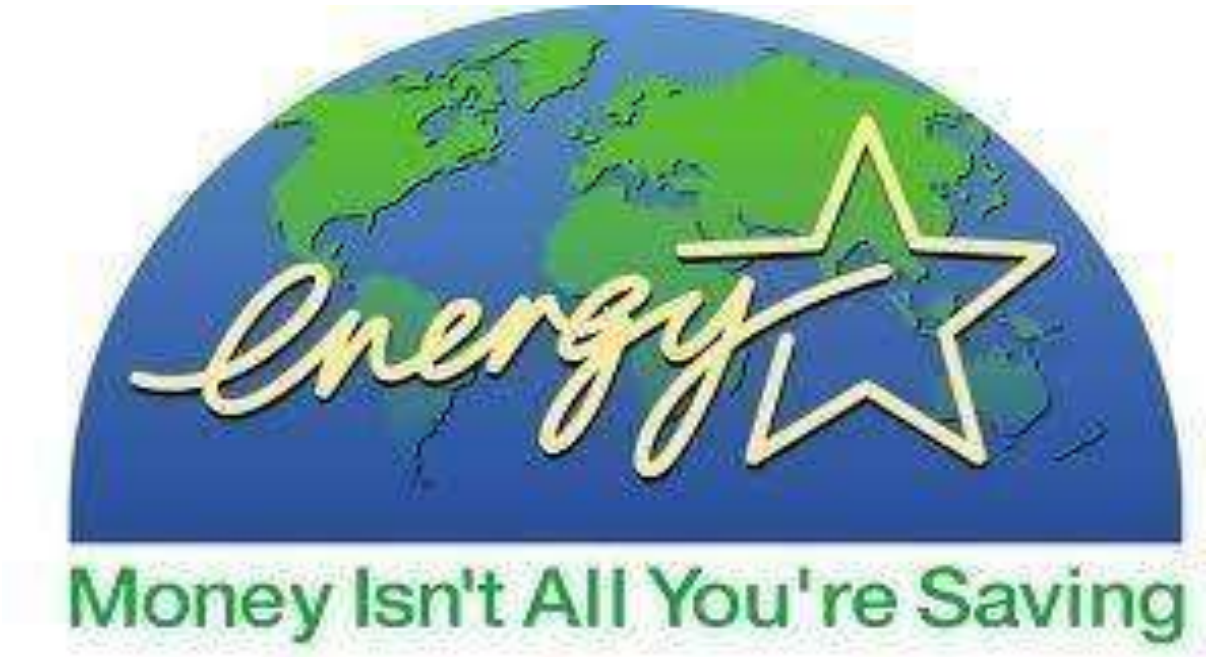
To save energy, make sure to unplug your laptop charger once you're done charging. Alternatively, you can use a wall outlet with a timer or plug your charger into a smart strip.

6. Choose an Energy Star-compliant PC

Energy Star is the US Environmental Protection Agency's symbol for energy efficiency. Every product that earns the Energy Star symbol is guaranteed to deliver both quality performance and energy savings. The more stars a product has, the more energy-efficient it is. Studies show that a single Energy Star-compliant computer and monitor can save between $7 and $52 per year in electricity bills.

These tips should help you lower your electricity costs and make smart hardware choices. If you need assistance in choosing the best hardware for your specific needs, give us a call. We'll be glad to help.

It may be difficult to save energy when you use your PC every day. In fact, a complete desktop computer setup (i.e., one that includes an internet modem, a pair of loudspeakers, and a printer) that is on for eight hours a day consumes 600 kWh per year. But don't worry, you can use the above tips to reduce your PC power consumption



CONCLUSION.

It was really our privilege & honor to work with the team of M.S.G. College at their site for energy auditing activities. We have made sincere efforts to identify energy wastes in almost all the areas of concern & have noted following shortfalls which should be acknowledged & attended to by the campus management.

- In efficient use of existing solar power plant
- Electrical power distribution system is energy inefficient & complicated
- Water tank levels should be automatically controlled to avoid unnecessary running of borewell & water pumps. Manual level control of water tanks is not recommended. Suitable level switches to be installed on all the water storage tanks.
- Automatic power factor controller (APFC) should be installed to maintain the power factor to optimum value of 0.995. This may not only reduce energy charges but also optimize demand charges.
- Energy conservation tips given in this report should be followed with all the computers in the campus to save power.
- Occupancy switches should be installed in all the cabins to automatically switch off lights/Fans/AC when not occupied.
- All lighting in the campus should be replaced with energy efficient LED lighting.
- Proper preventive maintenance of all existing pumps, motors, electrical hard wares, ACs, should be done on regular basis to initiate energy conservation.

We once again thank M.S.G. College Team for their support & cooperation during our site audit & also appreciate the vision of top management including Shri Apurvaji Hiray & Rahul Jagtap to undertake this audit for a very noble cause & wish the college management all success in their efforts to conserve energy on sustainable basis.

Good Luck

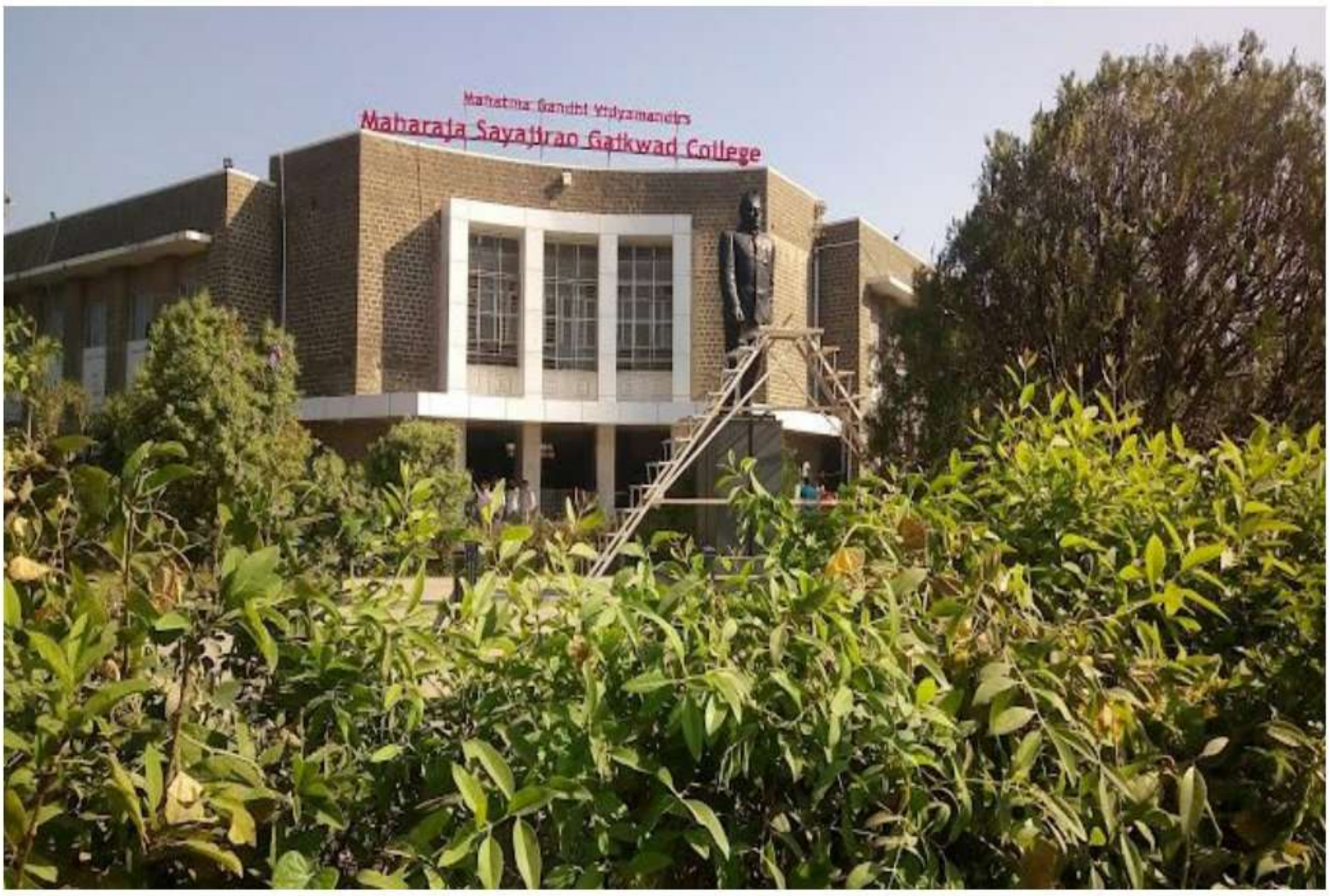
MM CONSULTANCY SERVICES TEAM.

COMPREHENSIVE GREEN AUDIT REPORT

FOR

MAHATMA GANDHI VIDYAMANDIR'S

M.S.G. COLLEGE MALEGAON CAMP, MALEGAON. DIST. NASHIK.



DATE OF AUDIT—FEB 13, 2023.

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ACKNOWLEDGEMENT.

MM Consultancy Services Nashik is grateful to the Principal Shri S.N. Nikam Sir & Management of Mahatma Gandhi Vidya Mandir Trust M.S.G. College, Malegaon Camp, Malegaon dist. Nashik for giving us an opportunity to carry out a detailed GREEN audit of their complex to identify potential for Green Initiatives taken in their complex to optimize environmental upgradation.

Environmental improvements by following green initiatives have gained utmost importance today for education institutions as environmental conditions are deteriorating day by day & therefore efficient GREEN management is the need of the hour. Apart from energy savings, Green Initiative effort leads to reduction in Greenhouse gas emissions which improves our environment to protect our planet earth from drastic climate changes & overall natural disturbance. We really appreciate the mission & vision of Shri Apurva Hiray & his team to acknowledge the importance of energy & environment upgrades for sustainable development for present & future generation.

National Assessment & Accreditation Council (NAAC) has also emphasized energy conservation & environment protection for educational institutions by providing an adequate platform for accreditation & Rating to encourage them for special efforts for these noble causes. Needless to say, our present & future generation can survive only if sufficient weightage & importance is given from our end to upgrade our present systems more in line with Nature & natural processes.

We are also grateful to Shri D.K.Halwar Vice Principal, Shri T.A.Savale, Vice Principal, Dr.P.S.Patil, Academic Supervisor & Dr. D.G.Jadhav for their support & inputs provided during our audit. It may be noted that our audit is not fault finding exercise but is intended to bring about continual improvements in your college campus for the benefits of all of us incl. our future generation.

Our Sincere thanks to M.S.G. College Team who provided us with adequate data & tech. information to make this audit successful.

EXECUTIVE SUMMARY.

The future of humankind depends very much on our ability to change our lifestyles and agree to follow a low consumption pattern of living in terms of resources taken from the globe and return to a sustainable development path at the earliest. The opportunity window for restoring nature to its prolonged state of hosting life forms to flourish under its caring environs is according to scientists, very short and lasting only up to 2030. Within this time, with the willing actions of every citizen wherever they are, coordinated and directed actions should start and continue thereafter till a balancing stage is reached where moderate use of resources and mitigation actions for healing the hurts already inflicted, balance positively to a sustainable nature.

Eco campus is a concept implemented in many educational institutions, all over the world to make them sustainable because of their mass resource utilization and waste discharge in to the environment. MSG College believes that there is an urgent need to address these fundamental environmental problems and reverse the trends. The purpose of the audit was to ensure that the practices followed in the campus are in accordance with the Green Policy adopted by the institution.

Green Auditing of a Higher Education Institution is required as a part of Criterion VII (of the 7 criteria prescribed) under the Guidelines for Submission of the mandatory annual Internal Quality Assurance Report (IQAR) by Accredited Institutions. It works on the several facets of Green Campus including Water Conservation, Tree Plantation, Waste Management, Paperless Work, and Alternative Energy. With this in mind, the specific objectives of the audit was to evaluate the adequacy of the management control framework of environment sustainability as well as the degree to which the Departments are in compliance with the applicable regulations, policies and standards.

Initially a questionnaire survey was conducted to know about the existing resources of the campus and resource consumption pattern of the students and staff in the college. In order to assess the quality of water and soil, water and soil samples were collected from different locations of the college campus and analysed for its parameters. Collected data was grouped, tabulated and analysed. Finally a report pertaining environmental management plan with strength, weakness and suggestion on the environmental issue of campus is documented.

INTRODUCTION.

Environmental audit or Green audit reflects evaluations that help us to identify environmental compliance and management system, implementation gaps, along with related corrective actions. Green audit is a useful tool to determine how and where the most energy or water resources are being used, the type and volume of waste generated and can then considerations be given on how to implement changes and make savings. It can create health consciousness and promote environmental awareness, values and ethics. Overall, it plays a vital role in imparting a better understanding of Green impact on campus to staff and students.

Need for green audit

As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more prevalent. In this context, it becomes imperative to adopt the system of the Green Campus for the Institutes which will lead to sustainable development. Besides, it also reduces a sizable amount of atmospheric carbon dioxide from the environment.

Green Audit is assigned to the Criteria 7 of NAAC, National Assessment and Accreditation Council which is a self-governing organization of India that accredits the institution according to the scores assigned at the time of accreditation. NAAC has made it mandatory that all Higher Educational Institutions should submit an annual Green Audit Report. Moreover, it is part of Social Responsibility of the Higher Educational Institutions to ensure that they contribute towards the reduction of global warming through Carbon Footprint reduction measures.

Objectives of the audit.

* Understanding the current practices of sustainability with regard to the use of water and energy, generation of wastes, transportation, purchase of goods, etc;

* Establishing a baseline of existing environmental conditions with focus on natural and physical environment;

*Creating awareness among students and staff concerning real issues of environment and its sustainability;

*To create a report that document baseline data of good practices and provide strategies and action plans towards improving environmental quality for the future.

PROFILE OF MSG COLLEGE.

M.S.G Arts, Science & Commerce college is situated in Malegaon Camp, Dist. Nashik in Maharashtra state of India. Established in 1959, MSGASCC is a Private college. The college is accredited by UGC, AICTE. M.S.G Arts, Science & Commerce college offers 40 courses across 7 streams namely Arts, Science, Commerce and Banking, Law, IT. Popular degrees offered at M.S.G Arts, Science & Commerce college include BA, B.Com, BSc, BBA, BCA. Besides a robust teaching pedagogy, M.S.G Arts, Science & Commerce college is also a leader in research and innovation. Focus is given to activities beyond academics at M.S.G Arts, Science & Commerce college, which is evident from its infrastructure, extracurricular activities and national & international collaborations. The placement at M.S.G Arts, Science & Commerce college is varied, with recruitment options both incorporates and public sector as well as entrepreneurship.

The main object of the institute is to provide quality education to enhance individual performance and elevate professional standards through innovative training programs in varied disciplines, research and extension activities.

M.S.G. Arts, Science and Commerce College has established itself as an institute of great repute in the area of ARTS/SCIENCE/ENGINEERING/ LAW ETC. Join us in building a successful partnership in carving a great future and embark on a fascinating journey with M.S.G. Arts, Science and Commerce College

METHODOLOGY.

In order to perform green audit, the methodology that included different tools such as preparation of questionnaire, physical inspection of the campus, observation and review of the documentation, interviewing key persons and data analysis, measurements and recommendations was adapted.

Onsite Visit.

Field visit was conducted by the Green Audit Team. The key focus of the visit was on assessing the status of the green cover of the Institution, their waste management practices and energy conservation strategies etc.

Focus Group Discussion.

The Focus Group discussions were held with staff members and the management focusing various aspects of Green Audit. The discussion was focused on identifying the attitudes and awareness towards environmental issues at the institutional and local level.

Energy and waste management.

With the help of Teaching, Non- teaching staff, students, Administrative officer, Building Management Engineer and electrical Supervisor, the audit team has assessed the energy consumption pattern and waste generation, disposal and treatment facilities of the college. The monitoring was conducted with a detailed questionnaire survey method.

The study covered the following areas to summarize the present status of environment management in the campus:

* Water management

- Energy Conservation
- Waste management
- E-waste management
- Green area management
- Environmental Monitoring.

OBSERVATIONS & RECOMMENDATIONS.

1. WATER MANAGEMENT.

The study observed that the main source of water for the institute is received from recharge wells. Water for potable purpose is also received from Municipal corporation in an 10 KL underground tank on ground floor. Water is used for drinking purpose, toilets and gardening. The waste water from the RO water purifier is used for gardening purpose. During the survey, no loss of water is observed, neither by any leakages, or by over flow of water from overhead tanks. The data collected from all the departments is examined and verified. On an average the total use of water in the college is 45000L/day, which include 20,000 L/day for domestic, 15,000 L/day for gardening purposes and 10,000 L/day for drinking purpose.

Good Rain water harvesting initiatives have been observed in the college premises.

Harvesting of rain water is carried out during monsoon season from the following Buildings-

- Main College Building.
- Library Building
- Senior college “B” Wing
- Senior College “C” Wing.

Harvested rain water is used for recharge of borewells & also for Gardening. Recharging of borewells in the premises helps to improve the yield of existing borewells particularly in summer season & assists college management to save on additional bills on outside water tankers in dry season.

Recommendations—

- It is however recommended to further make use of terrace space of other buildings available to optimize rain water harvesting. As rain water is purest form of water, it could be conserved in large storage tanks for efficient use in summer season.
- Quality analysis of RO outlet water used for drinking purpose is desirable & should be carried out every three months in college Lab it self to know parameters like pH, TDS & Hardness for the safety of students & Staff.
- There should be a suitable frequency to clean the underground & Terrace water storage tanks preferably every six months.

2. ENERGY MANAGEMENT.

This indicator addresses energy consumption, energy sources, energy monitoring, lighting, appliance, natural gas and vehicles. Energy use is clearly an important aspect of campus sustainability and thus requires no explanation for its inclusion in the assessment. The study carried out also analysed the use of alternate energy resources that are eco-friendly.

The energy is utilized in the Campus for lighting, space heating and cooling, running of laboratory instruments, appliances, water heating, ground water pumping, cooking and transportation. The source of energy for all the buildings within the campus is through electricity only.

The institution consumes about 80000 KWH per Month as indicated in the following Table. Besides, Concentrated Solar Power Plant of 10 KW Capacity having 32 solar panels is Installed in the Campus provides of the daily additional generation of 40 Units from solar Source. The campus contains Lights and fans in use. Average cost of power purchased from MSEDCL is estimated @ Rs.10.5 per KWH.

The entire campus including common facility centres are equipped with LED lamps and LED tube lights, except at few locations. Computers are set to automatic power saving mode when not in use. Also, campus administration runs on switch–off drill on regular basis. Noteworthy observation in the campus during our audit is provision of Solar Street Lights with a battery & the whole campus looks very attractive with these solar lamps in evening.

Annual Consumption & Cost.		
Months	**Bill-Rs.**	**Units/Kwh**
	N0. 1 to 9	**No.1 to 9**
Nov-22	**52582**	**5449**
Oct-22	**248407**	**31095**
Sep-22	**62294**	**4838**
Aug-22	**43392**	**3288**
Jul-22	**45340**	**3497**
Jun-22	**57001**	**4829**
May-22	**57162**	**5197**
Apr-22	**63943**	**5682**

Mar-22	34181	2757
Feb-22	96140	6641
Jan-22	65507	5844
Dec-21	121841	11714
Nov-21	19840	1352
Total	967630	92183
Unit Cost	Rs/Kwh	10.50

Energy Rating

After the complete survey and analysis of the campus as per ISO 50001:2018 Energy Management System Standards, we rate the campus Score 4/5.

RECOMMENDATIONS.

- As % age of present solar power generation to Total power consumption of the Campus is negligible, considering the ample Roof Top Space available, it is recommended to install & increase the present power generation to at least 50 KW. This will not only set an example for other colleges in the area for a noble utilization of renewable energy for captive use but also shall be cost effective considering a large power consumption of the premises.
- Presently there are NINE separate meters for each section of the Campus which result in additional power losses & also increase administrative work of the Campus. A only ONE Meter is recommended for the whole campus for a uniform & cost effective power distribution.
- A suitable preventive maintenance program is recommended for execution every month to clean the solar panels for optimizing solar generation capacity as the collection of dust & sticky material on the panel surfaces affects drastically the efficiency of solar power generation.
- Existing Ceiling fans may be replaced stepwise with energy efficient BLDC Motor Fans to cut down electricity consumption of existing fans by more than 50 % and therefore capital investment made for this initiative could be recovered within one year.
- All Roof water storage tanks should be provided with Automatic Level Controllers & Level switch to save power as well as overflow water.

WASTE MANAGEMENT.

This indicator addresses waste production and disposal of different wastes like paper, food, plastic, biodegradable, construction, glass, dust etc. Furthermore, solid waste often includes wasted material resources that could otherwise be channelled into better service through recycling, repair, and reuse. Solid waste generation and management is a burning issue. Unscientific handling of solid waste can create threats to everyone. The survey focused on volume, type and current management practice of solid waste generated in the campus.

Liquid Waste Management-

Water conservation is a key activity as water availability affects on the development of the campus as well as on all area of development such as farming, industries, etc. Keeping this view water conservation activity is carried out.

The waste water generated is disposed off into the underground sewage tanks/Pits through waste water drainage to municipal server. The source of wastewater is Domestic Waste Water i.e., Sewage water, Lab water & chemical wastes. The Sewage water mainly comes from Toilets of college, hostel, kitchen and canteen.

RECOMMENDATIONS-

- A Suitable Sewage Treatment Plant (SWP) is recommended to be installed to treat sewage water for recycling & reuse purpose. Treated water can be used for Gardening. As water scarcity is becoming serious issue day by day, recycle & reuse of waste water is highly recommended.
- Sludge generated from SWP can be effectively used to produce manure which can be utilized for various plants in the Campus.

Solid Waste Management-

Waste generated from tree droppings and lawn management are major solid wastes generated in the campus. Separate dustbins are provided for Bio-degradable and Plastic waste in order to segregate them at the source itself.

Single sided used papers are reused for writing and printing in all the departments to minimize the usage of papers. Important and confidential reports/ papers are sent for pulping and recycling after completion of their preservation period. Very less plastic waste (0.1Kg/day) is generated by some departments, office, garden etc and campus is declared as Plastic Free zone. Metal waste and wooden waste is stored and sent to authorize scrap agents for further processing. Glass bottles are reused in the laboratories.

The college has separate bins to collect biodegradable and non-biodegradable waste generated in the campus. Regular meetings are conducted with ground staff regarding the cleanliness of the campus and proper disposal of waste.

Vermicompost is **the product of earthworm digestion and aerobic decomposition using the activities of micro- and macroorganisms at room temperature**. Vermicomposting, or worm composting, produces a rich organic soil amendment containing a diversity of plant nutrients and beneficial microorganisms.

Vermicomposting is a kind of composting,certain species of earthworms are employed to make compost. It is basically a mesophilic process that employs microbes and earthworms. **The earthworms feed on organic waste material and excreted them out in a granular form (cocoons)**.

Campus have already initiated Vermicomposting project in the cool zone to dispose off collected solid wastes on regular basis & thereby generating a compost which is used exclusively in Campus Garden.

RECOMMENDATIONS.

- Present Capacity of Vermicomposting is too less to dispose off huge solid wastes being generated in the Campus. It is therefore recommended to install high capacity disposal systems in a cool location. Apart from efficient disposal of solid wastes, the process can generate a good quality manure which can be sold in market if exceeded the campus demands.
- Regular cleaning & collection of solid wastes is recommended to avoid huge spread all over spoiling the beauty of Campus. Housekeeping efforts need to be increased to maintain the site clean & waste free.

E-Waste Management-

E-waste is a consumer and business electronic equipment that is near or at the end of its useful life. This waste makes up about 5% of all municipal solid waste worldwide. It is hazardous than other waste because electronic components contain cadmium, lead, mercury, and Polychlorinated biphenyls (PCBs) that can damage human health and the environment.

E-waste generated in the campus is of minimal quantity. It is being effectively managed, keeping in mind the environmental hazards that may arise if not disposed properly.

The cartridges of laser printers are refilled outside the college campus. Awareness programme was conducted by college regarding E-waste Management. The E- wastes and defective items from computer laboratories are being stored properly and recycled in effective Manner.

The dismantled hardware of personal computers are used in PC trouble shooting lab. The dismantled electronic spare parts are immediately sold for reuse. The minimal amount of e- waste that is generated is taken by external vendor with Proper MOU.

The Campus at present works on 70 % paperless functioning. Only critical circulars & Displays are printed out where necessary. 30 % Paper wastes are disposed off through Municipal take away system.

RECOMMENDATIONS.

- A wastewater treatment plant should be installed to recycle and reuse the waste water generated from domestic use.
- Use reusable resources and containers and avoid unnecessary packaging wherever possible.
- The management should take an initiative to purchase recycled resources when they are available.

GREEN AREA MANAGEMENT.

This includes the plants, greenery and sustainability of the campus to ensure that the buildings conform to green standards. This also helps in ensuring that the Environmental Policy enacted, enforced and reviewed using various environmental awareness programmes.

Many trees are maintained in the campus (around 45species) to maintain the bio diversity. Various tree plantation programmes are being organized at college campus through NSS (National Service Scheme) unit and Management. This program helps in encouraging eco- friendly environment which provides pure oxygen within the institute and creates awareness among campus students. The plantation program includes various types of indigenous species of ornamental and medicinal wild plant species.

Well developed Botanical Garden exists in the premises with Barcode system provided for each of 200 Trees planted. Management celebrates Birth day of each member who gifts one plant to management which is instantly planted on the same day. This is a noteworthy feature which highlights Green Area awareness of the Staff.

Roads:

Roads-

Roads in college are laid with provision for rainwater to seep through easily. This enables the easy recharge of ground water.

Plastic free campus

The usage of plastic in college is minimal. The staff and the students are not encouraged to use one time use plastic, plastic bags and disposable plastic things throughout the campus.

E – communication.

The principal‘s office, all the Departments of the college, Examination cell, and laboratories are very well connected with a good and efficient LAN network. Hence all the inter office correspondence is done through email. This reduces the usage of papers.

RECOMMENDATIONS.

- Review periodically the list of trees planted in the garden, allot numbers to the trees and keep records.
- ➢ Establish a College Environmental Committee that will hold responsibility for the enactment, enforcement and review of the Environmental Policy.
- ➢ Environmental Committee shall be the source of advice and guidance to staff and students on how to implement this Policy.
- ➢ Ensure that an audit is conducted annually and action is taken on the basis of audit report, recommendation and findings.
- ➢ Indoor plantation to inculcate interest in students, Bonsai can be planted in corridor to bond a relation with nature. Environmental monitor.
- Use of Bicycles & Battery operated vehicles is recommended in the Campus to eliminate Green gas emissions to improve the environment.

ENVIRONMENTAL MONITORING.

As part of green audit of campus, the Green Audit Assessment Team has carried out the environmental monitoring of campus. This includes Illumination, Noise level, ventilation and indoor air quality of the class rooms. It was observed that illumination and ventilation is adequate considering natural light and air velocity present. Noise level in the campus is well below the limit.

Campus has maintained pollution free environment with good use of available resources.

ANNEXURE-I

STATEMENT OF EXPENSES INCURRED ON GREEN INITIATIVES AS %age OF TOTAL EXPENSES EXCLUDING SALARIES.

Sr. No.	Academic Year	Total expenses Excluding Salary		Total Expenditure Incurred	Investment in Green Initiatives	Percentage of Expenses (%)
		Grant	Non-Grant			
1.	2021-22	3325907	3313178	6639085	856802	12.90 %
2.	2020-21	7380480	2831579	10212059	875681	8.57 %
3.	2019-20	13207794	6065791	19273585	770128	3.99 %
4.	2018-19	10650698	7941862	18592560	537765	2.89 %
Total		**34564879**	**20152410**	**54717289**	**3040370**	**5.56 %**

MSG College Management have spent reasonable amount in promoting Green Initiatives in the college campus & reflects concern & awareness of College Staff & Students & particularly Principal/Management for their vision to make this mission successful & transparent.

It is however recommended to spend minimum 10 % of total expenses excluding salary for promoting Greenhouse strategies.

We however appreciate the efforts which are visible in our site audit that MSG College Management have taken to represent implementation of many green strategies to bring the college campus at a very high level of competence.

ANNEXURE II.

MAHARAJA SAYAJIRAO GAIKAWAD ARTS, SCIENCE AND COMMERCE COLLEGE, MALEGAON CAMP

VEGETATION OF COLLEGE CAMPUS

Sr. No.	Name of the Species	Number of Species
1	*Acacia catechu* (L.f.) P.J.Hurter & Mabb. (Khair)	10
2	*Achras sapota* L. (Chiku)	01
3	*Aegle marmelos* Corr. (Bel)	06
4	*Ailanthus excels* Roxb. (Maharukh)	1
5	*Albizzia lebbeck* (L) Benth. (Shirish)	3
6	*Alstonia scholaris* (L) R.Br Saptaparni	1
7	*Annona squamosa* L.(Sitaphal)	10
8	*Artabotrys hexapetalus* (L.f.) Bhandari (Hirawa Chafa)	1
9	*Azadirachta indica* Adr. Juss (Neem)	46
10	*Bauhinia racemosa* L. (Kanchan)	3
11	*Biota orientalis* Endl. (L) (Morpankhi)	16
12	*Callistemon lanceolatus* D. C (Bottle Brush)	2
13	*Cocus nucifera* L. (Naral)	16
14	*Codonocarpus continifolius* (Desf.) F, Muell	17
15	*Cycas revoluta* Thunb. (Cycas)	2
16	*Dalbergia sissoo* Roxb. (Shisav)	11
17	*Delonix regia* Rafi. (Gulmohar)	3
18	*Emblica officinalis* Gaertn. (Awala)	2
19	*Eucalyptus globulus* Labill. (Nilgiri)	1
20	*Ficus benghalensis* L. Vad	4
21	*Ficus benjamina* L. (Ficus)	12
22	*Ficus glomerata* Roxb. (Umbar)	2
23	*Ficus religiosa* L. Peepal	5
24	*Gliricidia sepium* Stend. (Giripushpa)	4
25	*Grevillea robusta* A. Cunn. ex. R.Br. (Silver Oak)	1
26	*Leucaena leucocephala* (L.) De. Wit. (Subhabhul)	15
27	*Mangifera indica* L. (Amba)	5
28	*Manihot esculenta* Crantz. (Cassava)	2
29	*Michelia champaca* L.(Sonchafa)	4
30	*Millingtonia hortensis* L. (Akashnim)	20
31	*Moringa oleifera* Lamk. (Shevaga)	5
32	*Morus alba* L. (Tuti)	1
33	*Murraya koenigii* Spr. (Kaipatta)	4
34	*Nyctanthes arbour-tristis* L. (Parijatak)	2
35	*Oreodoxa regia* Kunth (Palm)	11
36	*Parkia biglandulosa* Wight & Arn. (Chendufal)	1
37	*Peltophorum pterocarpum* (DC.) K. Heyne Yellow Flame	1
38	*Phoenix* species (Khajur)	2

39	*Plumeria acutifolia* Ait. (Champa)	9
40	*Polyalthia longifolia* B & H (Ashok)	2
41	*Pongamia pinnata* Pierre. (Karanj)	30
42	*Psidium guajava* L. (Peru)	2
43	*Punica granatum* L. (Dalimb)	1
44	*Roystonea oleracea* Jacq. (Royal Palm)	22
45	*Samanea saman* (Jacq.) Merr. (Shirish)	1
46	*Santalum album* L. Chandan (Tall)	19
47	*Senna siamea* Lam. (Kashid)	2
48	*Sesbania sesban* (L.) Merr. (Rain tree)	3
49	*Spathodea campanulata* P. Beauv (Spathodea)	4
50	*Syzygium jambolana* Lamk (Jambhul).	3
51	*Tabernaemontana divaricata* R.Br. (Chandani)	1
52	*Tamarindus indica* Linn. (Chinch)	18
53	*Tecoma stans* L. (Ghantiful)	8
54	*Tectona grandis* L. (Sag)	34
55	*Terminalia arjuna* (Roxb.) Wight & Arn Arjun Tree	1
56	*Terminalia catappa* L. (Badam)	12
57	*Zizyphus jujuba* Lamk. (Bor)	7
	Total Species	**432**

We appreciate the records maintained by college management of various species growing in the college premises. Providing a Bar Code system for Botanical Garden is also a praise worthy achievement of college management.

We recommend to further augment total species in the college campus to minimum 1000 in next 2/3 years to set an example for other group colleges.

Name of the species are well defined in above Table & reflects a good initiative college management has taken for Vegetation of college campus.

CONCLUSION.

Though the institution is predominantly an Arts, Science & Commerce college, there is significant environmental research both by faculty and students. The environmental awareness initiatives taken by the management are substantial. The installation of solar Power Plant, Usage of Tree plantation through a gift on Birth Day celebration & Bar Coding for each tree in Botanical Garden practices are remarkable. Besides, environmental awareness programmes initiated by the administration proves that the campus is going green. The Herbal garden maintained by the College is highly appreciable. Few recommendations are ad& ded for waste management and waste reduction using alternate eco-friendly and scientific techniques. This may lead to the prosperous future in context of Green Campus and thus aid in a sustainable environment and community development

Vermicomposting sites for solid waste treatment are noteworthy & should be expanded in capacity to take care of total solid waste generated in the Campus.

There is a vast scope to increase the present capacity of solar power plant generation by installing additional 40 KW solar plant as adequate roof top area is available in the campus. Optimizing use of renewable energy is the first step taken to reduce green house emission contributing a lot in Green Development.

Temperature/Humidity Display at the helm of the main building is remarkable & praiseworthy feature indicating a totally dedicated Team for taking green house project on management priority.

Students have been assigned responsibility for keeping the campus clean & it was a pleasure to note that students are equally cautious & interested in a noble cause of waste management.

Solar Street Lights have been effectively installed to beautify the campus in the evening & all credit goes to staff & Management for this wonderful scheme.

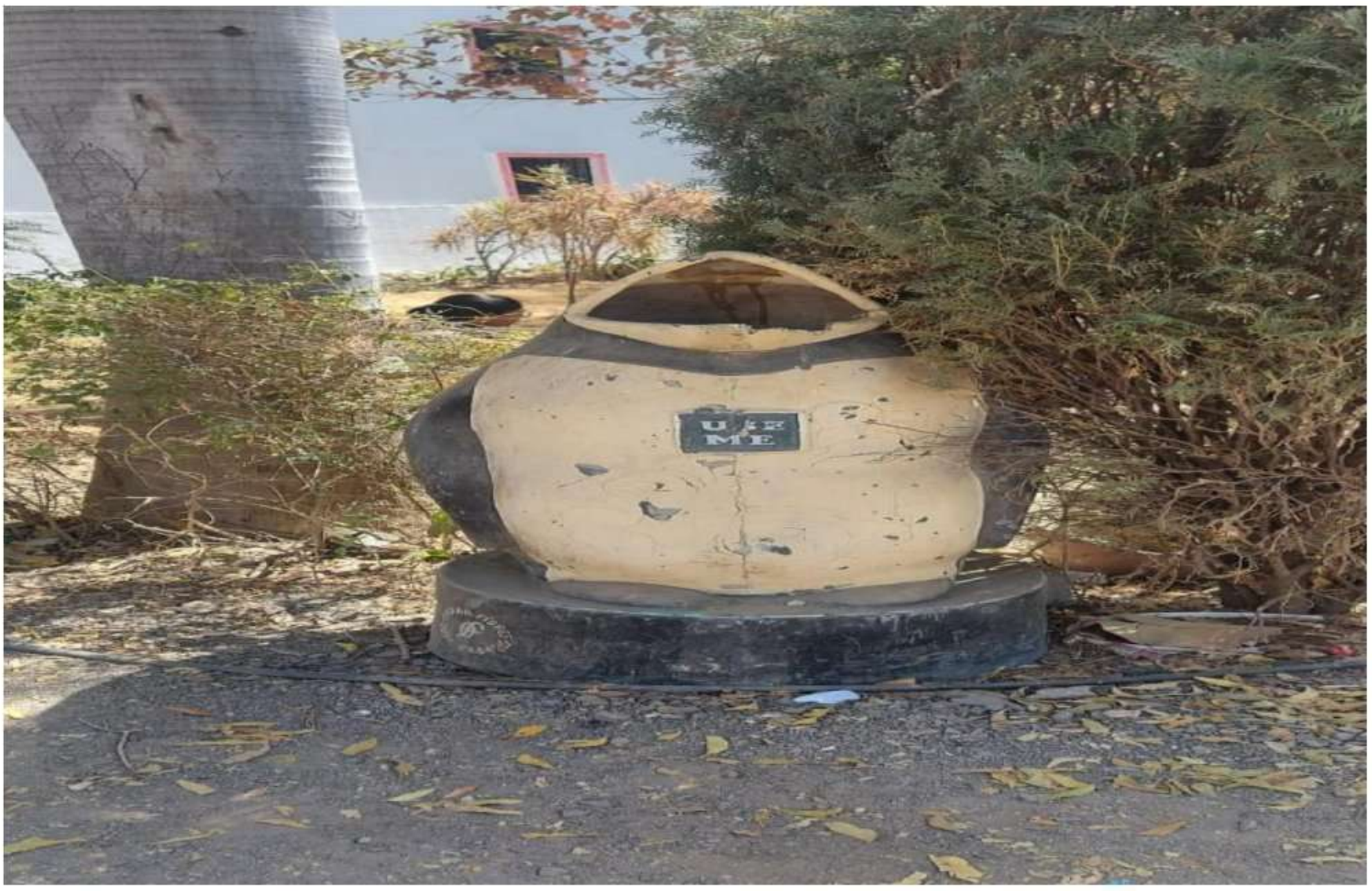
Last but not the least, Green awareness in the campus is of very high order & Team work is really appreciated. Lot of work has been done with initiative & awareness to keep College Campus Clean & Green & adequate maintenance is provided to sustain the efforts already taken.

Good Luck.

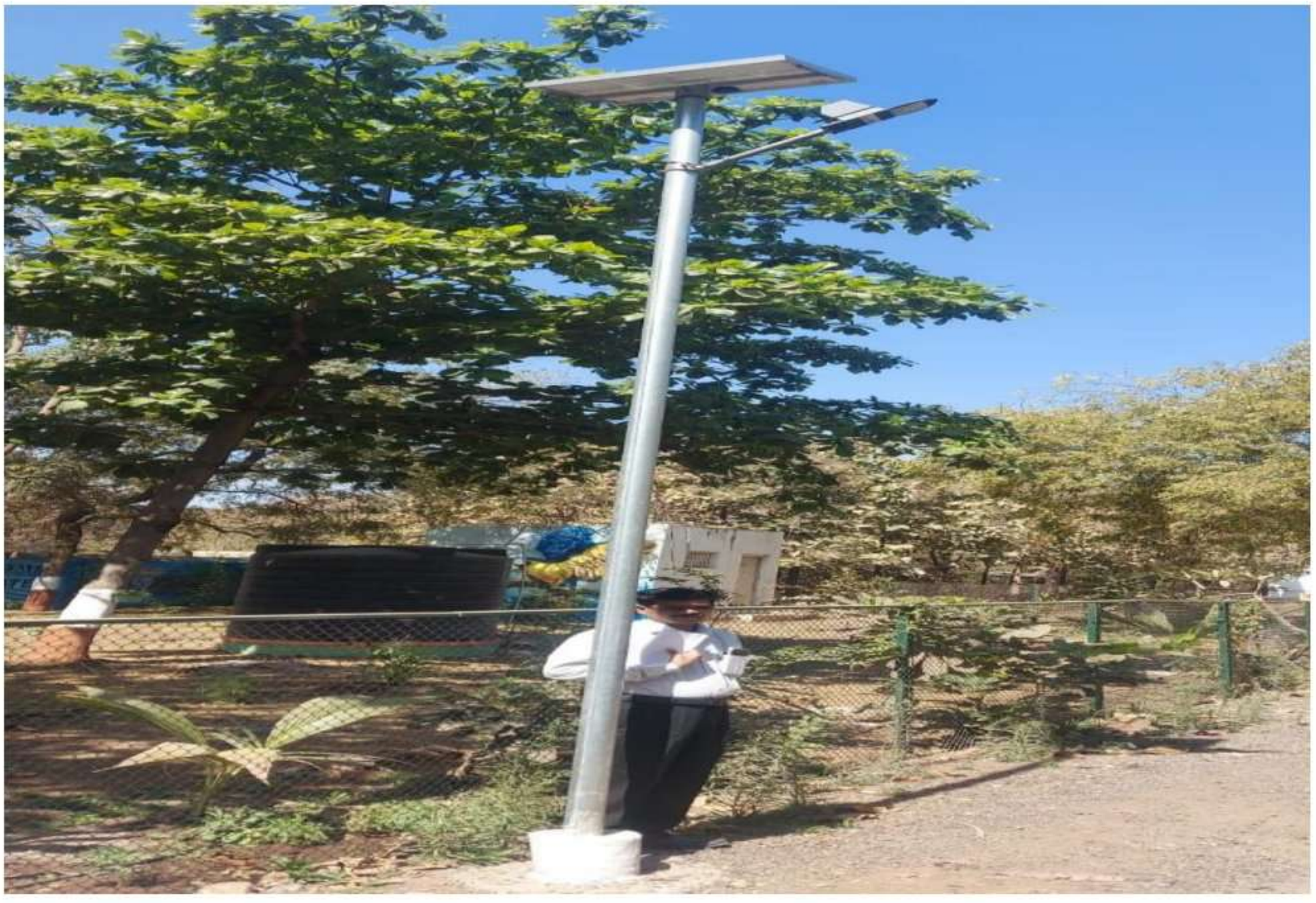
PHOTO GALLERY.

SOLAR POWER PLANT

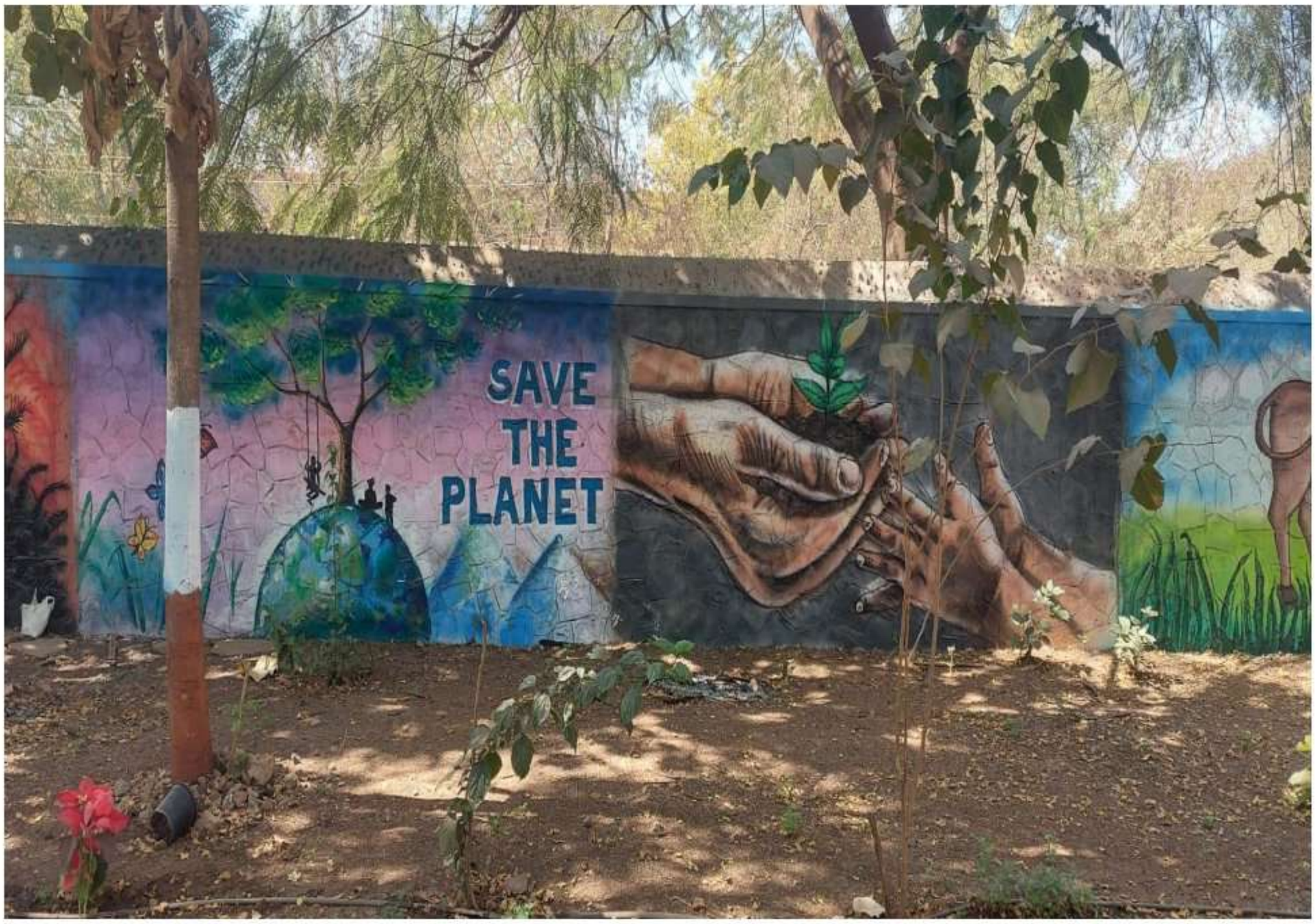
TREE PLANTATION



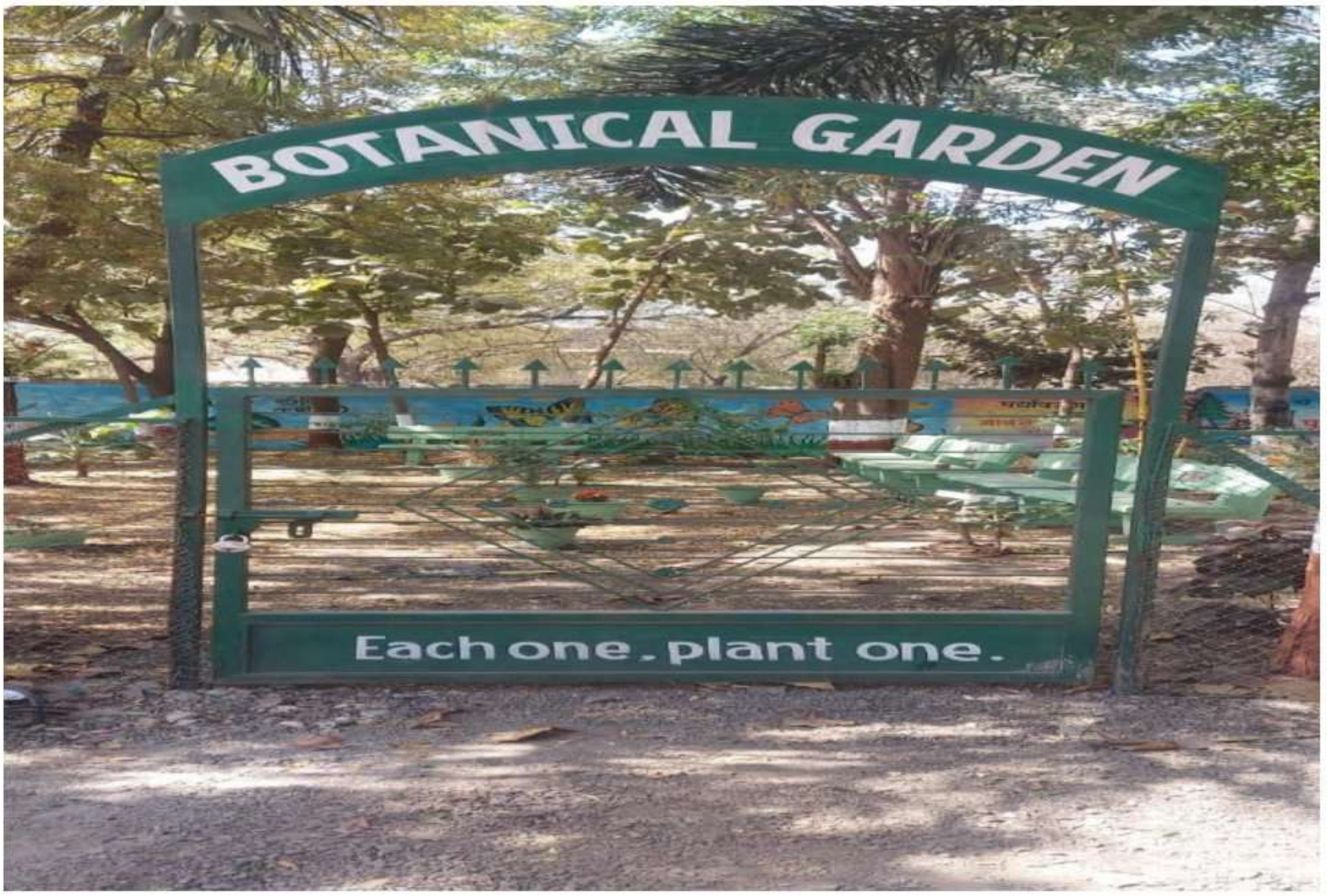
SOLID WASTE COLLECTION



SOLAR STREET LIGHT

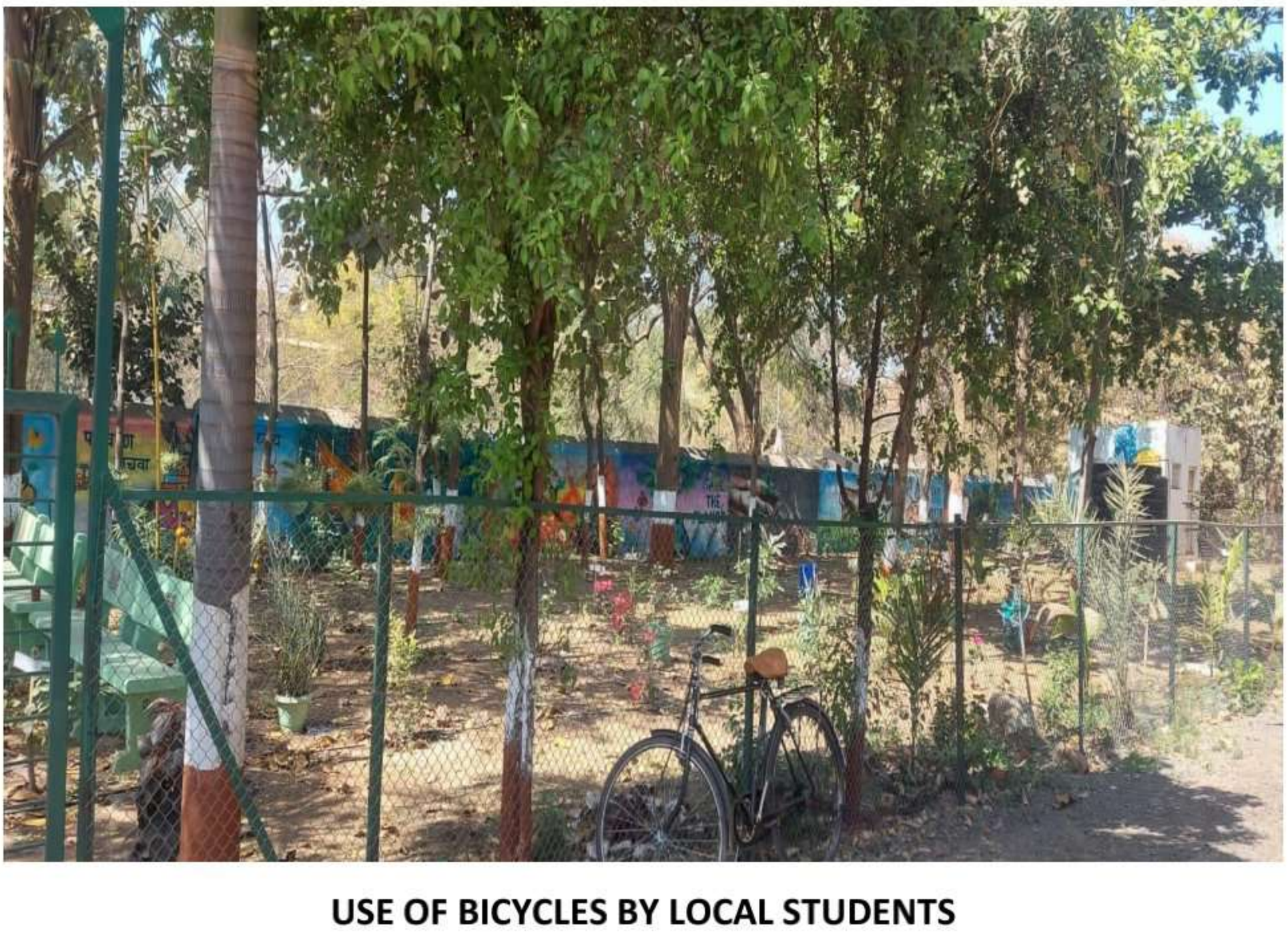


DIVERSITY IN UNITY OF PLANTS



BOTANICAL GARDEN

RO PLANT FOR DRINKING WATER



USE OF BICYCLES BY LOCAL STUDENTS