



MAHATMA GANDHI VIDYAMANDIR'S
ARTS, SCIENCE AND COMMERCE COLLEGE HARSUL
TAL-TRIMBAKESHWAR, DIST-NASHIK, MAHARASHTRA, PIN-422204
RE-ACCREDITED BY NAAC WITH B GRADE
AFFILIATED TO SAVITRIBAI PHULE PUNE UNIVERSITY, ID NO.PU/NS/ASC/048/(1993)



Criterion-7 Institutional Values and Best Practices (100)

Key Indicator- 7.1 Institutional Values and Social Responsibilities

7.1.3 QnM Quality Audit on environment and energy regularly undertake by the institution. The institutional environment and energy initiatives are confirmed through the following.

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Founder



Karmaveer Bhausaheb Hiray

**Mahatma Gandhi Vidyamandir's
ARTS, SCIENCE & COMMERCE COLLEGE**

(Affiliated to Savitribai Phule Pune University, Pune) ID No. PU/NS/ASC/048/(1993)

■ web : www.mgv.org.in/harsulcollege

■ Email : harsulcollege@gmail.com

Re-Accredited by NAAC with 'B' Grade

Declaration

This is to declare that the information, reports, true copies of the supporting documents, numerical data, etc. submitted/presented in this file is verified by Internal Quality Assurance Cell (IQAC) and is correct as per the record. This declaration is for the purpose of NAAC accreditation of HEI for 3rd Cycle period 2017-18 to 2021-22

Date: 20/06/2023

Place: Harsul

Dr. A. K. Aher

IQAC Coordinator
CO-ORDINATOR
IQAC

Arts, Science & Commerce College,
Harsul, Tal. Tryambakeshwar, Dist. Nashik



Dr. M. R. Deshmukh

IQAC Chairman and Principal
PRINCIPAL

M. G. Vidyamandir's
Art's, Science & Commerce College
Harsul, Tal. Tryambakeshwar Dist. Nashik

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7.1.3 QnM Quality Audit on environment and energy regularly undertake by the institution. The institutional environment and energy initiatives are confirmed through the following.

1. Green Audit/Environmental Audit
2. Energy Audit
3. Clean and Green Campus initiatives.
4. Beyond the campus environment promotion activities.

Option A. All of the above



Mahatma Gandhi Vidyamandir's
Arts, Science and Commerce College, Harsul
Tal-Trimbakeshwar Dist- Nashik.



NAAC Reaccredited with 'B' Grade (CGPA -----)

Policy Document On Environment and Energy

Policy Document on Environmental Energy

Preamble:

The Environment and Energy usage Policy of Arts, Science and Commerce College, Harsul Tal-Trimbakeshwar Dist-Nashik is to manage energy in such a systematic way so as to minimize its impact on the environment. Green Campus Committee of college is devoted to the cause of environmental awareness, to undertake green initiatives, and to conduct green literacy programmes to save energy and to protect the environment.

Vision:

This environment and energy policy is binding for all the components of the institution and applies to all its stakeholders and to the various activities undertaken by the institution. The policy implies to explore the renewable energy resources to reduce the burden of the government and to find out alternate resources as solutions to the energy crisis. It will help us to embed efficiency and environmental awareness into our everyday activities, thus helping us to realize our responsibilities and commitment to conservation of natural resources and to limit its usage.

Objectives:

- To sensitize all stakeholders towards a Clean, Green, and Sustainable Environment.
- To help the students/Faculty understand each individual's responsibility to take an initiative to save the environment.
- To work with all stakeholders and the local community to adopt environmental good practice and the reduction of any adverse effects on the environment.
- To continuously improve the efficient use of all resources, including energy and water, and to reduce consumption and the amount of waste produced, recovering and recycling waste where possible.
- To ensure judicious use of environmental resources to meet the needs and aspirations of the present and future generations.

Policy:

Awareness: Shall be creating awareness on Environmental conservation among students, faculty, administrative and supportive staff and work towards sustainable development.

Eco-education: Environmental Science is a mandatory course focusing on environmental concepts and issues will be integrated into to all academic, curricular, and extracurricular activities and programs of the College.

Green Initiatives: The College will work towards conserving and protecting natural resources for the future generation and will adopt green initiatives and sustainable measures for a clean and green campus. Activities to insist a sense of responsibility on environmental preservation will be promoted.

Pollution Management: Towards reducing pollution, steps will be taken up for minimizing CO², emission from automobiles. Authorities shall take suitable steps for a Smoke-free and Tobacco-free campus. The relevant placards are displayed to highlight the need for a clean, green, and sustainable environment

Outreach Programmes: The College will take up initiatives through its extension activities to reach the society through campaigns, workshops and awareness drives on pertinent environmental issues.

Energy saving: Graded efforts will be taken to replace out dated and energy consuming equipment with Energy efficient equipment /LED bulbs, Sensor based energy conservation measures shall be adopted. All stakeholders shall avoid using electric lights in classrooms and halls where there is sufficient natural light

Renewable Energy: To ensure energy security and conserve Nation's natural resources, the use of renewable energy through installation of solar power panels to augment the energy needs of the college will be implemented soon in upcoming year.

Waste Management: Segregation of solid wastes in different color coded bins will be ensured across the campus, Solid waste management of organic matter through vermi composting will be sustained.

Ban on Single Use Plastic: Institute shall take a step forward to ban single use plastic all together to minimize plastic pollution in the campus. All stakeholders will be advised to use jute or cloth products for various purposes.

Water management: Through replenishing the ground water by roof top rainwater harvesting systems, bore well recharge system, trenches, ponds/bunds, judicious use of water resources and proper maintenance of water distribution system will be implemented **Quality**

audits on environment and energy: Energy Audit, Green Audit & Environment Audit to be conducted to assess and analyze the environmental impact. The analysis will be utilized to implement energy saving measures and upgrade the environmental condition in the campus.

This policy will be communicated to the students and employees via internal Communication channels, and will be made available to all the stakeholders on the institutional website. The Environment and Energy Policy, objectives and targets will be reviewed on a regular basis by the college under the guidance of the Principal of the college.



A handwritten signature in blue ink, appearing to read "Dr. Motiram. R. Deshmukh".

(Dr. Motiram. R. Deshmukh)

PRINCIPAL

M. G. Vidyamandir's
Art's, Science & Commerce College
Harsul, Tal. Tryambakeshwar Dist. Nashik

1) Green Audit/Environment Audit/Energy Audit:

i) Green Audit:

Internal Environmental Green Audit is conducted to evaluate the actual scenario at the campus as per policy document of Institute. Green audit can be a useful tool for a college to determine how and where they are using the most energy or water or resources; the college can then consider how to implement changes and make savings. It can also be used to determine the type and volume of waste, which can be used for a recycling project or to improve waste minimization plan. It can also create health consciousness and promote environmental awareness, values and ethics. It provides staff and students better understanding of green impact on campus. A clean and healthy environment aids effective learning and provides a conducive learning environment. Environment and Green Audit has been done MM Consultancy Service, Nashik (Maharashtra).

ii) Energy Audit:

Energy conservation is a worldwide objective. Availability and utilization of energy drives the growth of economy and advancement of any country and thus, the demand of energy is increasing day by day. The worldwide mounting energy crisis with galloping cost hike, concern for environmental protection and open market competitive economy possesses serious challenges

In this context college electricity audit has been done by MM Consultancy Service. The Energy Efficiency Assessment was undertaken in order to evaluate energy performance and identify potential energy conservation measures. The assessment was undertaken in three steps, i.e., document review of data and information initially provided by facility, on site activity and preparation of this report. The on-site activity was conducted by assessment team on 26 April 2023 consist of interviews with staff, electricians, collection/review of further data and a field inspection of the facilities and equipment's. The facility has executed a number of energy conservation measures at the time of audit itself.

Green Audit Certificate

MM CONSULTANCY SERVICES

BEE Certified Energy Auditors, MEDA Consultant & Chartered Engineers.

43, Niwas River View, Shankar Nagar, Gangapur Road, Nashik-422 013. (Maharashtra-India.)

Contacts 7058015178 Email-22mbhandare@gmail.com.

CERTIFICATE.

TO WHOMSOEVER IT MAY CONCERN.

This is to certify that Green Audit at Mahatma Gandhi Vidyamandir's Arts, Science & Commerce College- Harsul, Dist. Nashik was conducted on 26th April 2023. College has submitted necessary data and credentials for scrutiny. The activities and measures carried out by the college have been verified. The efforts taken by the college towards environment and sustainability is highly appreciated and commendable.

This Certificate is valid till 25th April, 2024.

Certificate No.—GA/10/2023.

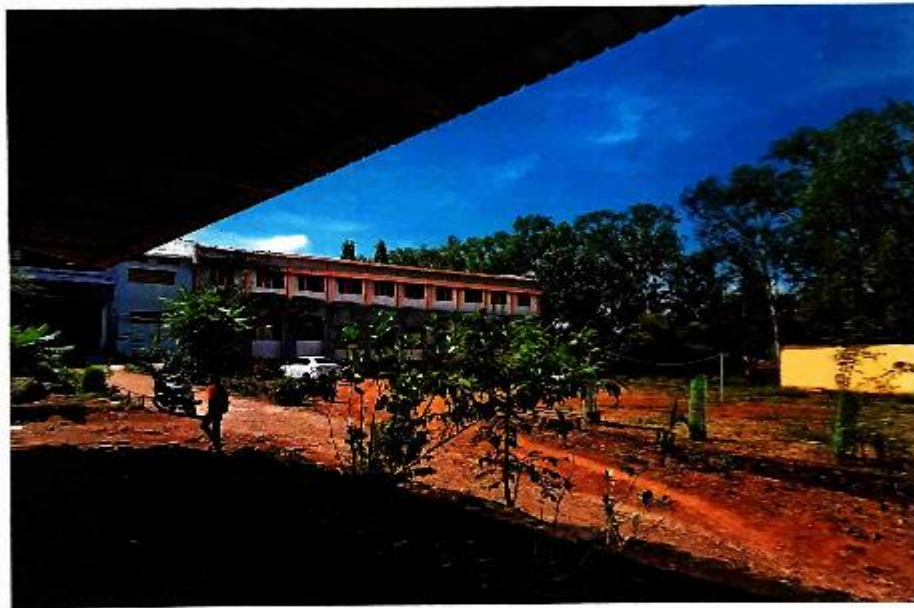
Date—26th April, 2023.



Mukund V. Bhandare
Executive Director & Auditor,
For, MM Consultancy Services,
Nashik.

Green Audit Report

**COMPREHENSIVE GREEN AUDIT REPORT
FOR
MAHATMA GANDHI VIDYAMANDIR'S
ARTS, SCIENCE & COMMERCE COLLEGE, HARSUL DIST. NASHIK.**



DATE OF AUDIT—APRIL 26, 2023.

AUDIT CARRIED OUT BY—

MM Consultancy Services, Nashik



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ACKNOWLEDGEMENT.

MM Consultancy Services Nashik is grateful to the Principal Dr. Motiram Raoji Deshmukh & Management of Mahatma-Gandhi Vidya Mandir's Harsul College 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 College Team for their necessary tech. inputs & proper co-operation provided for audit.

We are also grateful to Vice Principal Dr. Deshmukh for his valuable inputs, support & hospitality to make this audit transparent.

It may be noted that our audit is not faultfinding 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 MGV's Arts, Science & Commerce College Team who provided us with adequate data & tech. information to make this audit successful.



EXECUTVE 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. MGV 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 MGV's ARTS, SCIENCE & COMMERCE COLLEGE, HARSUL--NASHIK.

Arts, Science and Commerce College, Harsul was established in June 1993 for providing higher education to the Adivasis (Tribal) and educationally deprived students. It is run by Mahatma Gandhi Vidyamandir, Malegaon Camp under the able guidance of General Secretary Hon.Dr.Prashant Hiray, Coordinator Hon.Dr.Apoorva Hiray and Principal Dr. M.R.Deshmukh. The college has been completing 23 years of service to the cause of higher education for tribals. Arts, Science and Commerce college Harsul holds the distinction of being the only institution providing higher education to the tribal students in the surrounding region. The Motto of the institution is 'Bahujan hitay Bahujan Sukhay'. Accordingly the college continues to impart higher education to the tribal students who live in remote, unapproachable area of Nashik district. Majority of the students are economically and socially deprived. Along with facilitating the participation of tribal students in higher education, its efforts are directed at providing holistic education that encourages critical and independent thinking.

The college is permanently affiliated to SPP University. It has undergone the process of Assessment and Reaccreditation by NAAC in 2016 and scored 'B' grade. The college is recently included under the sections of 2F and 12B of UGC Act 1956 in Oct.2010.

Principal's Desk

At Harsul College, we are imparting higher education to the Tribal students who are socio-economically deprived. This certainly is a very substantial and potent task. The college is the only institution providing the facility of higher education in the surrounding Tribal region. Harsul and surrounding 58 villages have been declared as Tribal Zone by the Government of Maharashtra. Majority of our students are from the Tribal families. For years together not a single member of these families is formally educated. Therefore our students face several problems and challenges to keep pace with today's competitive age. They have to work very hard to compete with their urban counterpart. Considering this, we have to take extra efforts to bring them to the expected level of academics. This is a great challenge before us and our sincere efforts are directed towards making our students competent enough to face the challenges of 21st century.



Vision, Mission & Objectives

Vision Enrichment of society by providing educational facilities to the tribal community.

Mission

To impart education to the Tribal students and make them more employable in the market.

Objective:

1. To provide education to the tribal students
2. To increase educational atmosphere.
3. To achieve academic and social excellence.
4. To increase the rate of female students.
5. To impart quality education
6. To improve stake holders relationships.
7. To make the learners more employable.
8. To decrease the rate of drop outs in the higher education in the tribal areas.
9. To create learner oriented atmosphere.

Salient Features

- Arts, Science and Commerce college was established basically to impart higher education to the tribal students. The college is sincerely working to educate the tribal students and to create awareness among them about various socio-political and economical issues.
- More than 90% of the students belong to schedule tribes (S.T.)
- The college has 08 departments in Arts Faculty and Post graduate course M.A. in Marathi.
- The college has successfully organized 01 National level ,02 state level and 04 District level seminars in last 4 years.
- The college has support services like Library, Gymkhana, N.S.S., welfare Schemes for students, Internet etc.
- The college has very active N.S.S. Unit which organizes various activities such as Blood Donation Camp, Aids Awareness campaign, Special Winter Camp etc.
- The college organises various extension activities like Saint Gadge Baba Lecture series, Nirbhaya Kanya Yojana, Soft Skills development programme, Youth Festival and Annual Social Gathering.



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 well only (One Bore well) & lifted to 3 nos. above ground tanks on terrace of 1000 Lit. capacity each. Water for potable purpose is received from 1000 Lit tanks to RO Plant & then used by staff & students as required. 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 30000 L/month, which include 15,000 L/month for domestic, 5000 L/Month for gardening purposes and 10,000 L/month for drinking purpose.

There is a potential for Good Rain water harvesting initiatives observed in the college premises from roof sheets for which collection system is recommended.

Harvesting of rain water is presently not possible due to construction activities going on under expansion of main college Building. There is however an opportunity for Rain water harvesting from New Building Roof where 10 Kw solar plant is installed.

Recommendations—

- It is however recommended to further make use of terrace space of Main 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 Terrace water storage tanks preferably every six months.
- RO Units should be maintained properly to keep them in working condition.
- Building terrace is not available eliminating the possibility of systematic rain water harvesting.



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 200 KWH per Month average as indicated in the following Table. Besides, Concentrated Solar Power Plant of 10 KW Capacity having 42 solar panels is Installed in the Campus provides of the daily additional generation of 40 Units/Day from solar Source. The campus contains Lights and fans in use. Average cost of power purchased from MSSEDCL is estimated @ Rs.11 per KWH.

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

As reported by Principal, Solar plant was connected to GRID this month only & solar generation along with credit in actual bill may be reflected in April 2023 Bill.

Further, it was observed that MSEB Main meter not working since many days as average consumption of 178 units is charged every month since March 2022.

Present electrical load is tabulated in the following Table.

ELECTRICAL LOAD IN THE CAMPUS

Sr.No.	EQUIPMENT	ELE.LOAD KW	NUMBERS	OPERATING HOURS	REMARKS
1	Tube Lights	20 W	23	10	ALL LED
2	Ceiling Fans	70 W	17	10	
3	Computers	—	10	4	
4	Printers	—	5		
5	Refrigerator	—	1		



6	Air Cooler	—	1	6	Limited Use
7	Water Cooler	—	1	4	Limited Use
8	Bore well Motor	750 W	1	4	
9	Water Pumping Motor	750	1	4	

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 is above 1 as solar power generation from 10 Kw solar plant is estimated @ 1200 Units per Month. Considering the power consumption of college campus, excess power generation can be exported to GRID & suitable credit can be obtained from MSEDCL. Present Import from the GRID should be Zero as evident from the Bills in above Table
- 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 present energy inefficient lighting is replaced with energy efficient LED Lighting which is commendable on the part of management.
- There is reflection of Imported Units, Exported Units & Solar power generated in the electricity Bill issued by MSEDCL. It is however recommended to get proper credit of solar units generated to make the current bill minimum. Also excess units generated by solar plant should be credited.
- Efficient use of existing renewable energy source is recommended.
- Adequate lighting is recommended in Class Rooms.
- LED Energy efficient lighting optimization is strongly recommended all over college premises including old & new buildings to lead green initiative & also save energy. All present energy inefficient lighting to be replaced with energy efficient LED Lighting.



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 to arrange 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 macro organisms at room temperature. Vermicomposting, or worm composting, produces a rich organic soil amendment containing a diversity of plant nutrients and beneficial microorganisms.

Campus have already plans for 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.

- It is therefore recommended to install high capacity Vermi Composting 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/Lab 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 19 species) 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 p'antation program includes various types of indigenous species of ornamental and medicinal wild plant species.

Well developed Botanical Garden should be planned in the premises with Barcode system provided for Minimum of 100 Trees planted. Management should celebrate 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 in college are laid with provision for rainwater to seep through easily. This enables the easy recharge of ground water.



Electric Vehicles are being used by students & Staff as a green initiative & is appreciated & notable. Use of electrical vehicles to be increased in future.

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.

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.



CONCLUSION.

Though the institution is predominantly a 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 recommended. 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 added 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 to be initiated & should be expanded in capacity to take care of total solid waste generated in the Campus.

There is a vast scope to utilize the present capacity of solar power by availing the credit for excess power generation. 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 recommended & to be initiated thereby indicating a totally dedicated Team spirit 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 Should be effectively installed to beautify the campus in the evening & all credit goes to staff & Management for this wonderful initiative.

Presently solar power is not used effectively to reduce present electricity bill to bare minimum. It is strongly recommended to monitor daily solar generation by taking daily readings in registrar & also examine the export & excess power generated than import to reduce present electricity bill to ZERO.

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.



LIST OF PLANTS

ANNEXURE-I



Mahatma Gandhi Vidyamandir's
Arts, Science & Commerce College, Harsul
Tal - Triambakeshwar Dist - Nashik
Phone No. 02534 227292 Mob. No. 961027666

Web: www.mgv.org/nashikcollege

E-mail: harsul@mgv.org

सर्वर कुडांची लागवड या महत्विद्यालयाच्या अखरासमध्ये करण्यात आलेली आहे.

अ.क्र.	कुडांची नाव	संख्या	अ.क्र.	कुडांची नाव	संख्या
१	शिखर	१	१६	जलसंध	६
२	भेरा	१	१७	शमी	१
३	गिराव	१	१८	कलेर	६
४	भेरा	४	१९	सतरणा	२
५	करंज	२	२०	इतर जातीचे वृक्ष	४१
६	बिटी	३	२०	कागु	१०
७	चंदी	१			
८	सायल	१०			
९	गुलमोहर	८			
१०	निय	२			
११	चिच	१			
१२	आकळा	१			
१३	अनाम	१			
१४	आंधळ	१			
१५	नारळ	६			
	एकूण	११४			

(Signature)

महाराष्ट्र
म. शासकीय विद्यापीठ संस्थान
कला, विज्ञान व व्यावसायिक महाविद्यालय
हनुमान, ता. अहमदनगर, जिल्हा अहमदनगर



PHOTO GALLERY.



RAIN WATER HARVESTING



RO PLANT FOR DRINKING WATER.





SOLAR POWER PLANT ON THE ROOF.



GREEN BELT



Energy Audit Certificate

MM CONSULTANCY SERVICES

BEE Certified Energy Auditors, MEDA Consultant & Chartered Engineers.

43, Niwas River View, Shankar Nagar, Gangapur Road, Nashik-422 013. (Maharashtra-India.)

Contacts 7058015178 Email-22mbhandare@gmail.com.

CERTIFICATE.

TO WHOMSOEVER IT MAY CONCERN.

This is to certify that Energy Audit at Mahatma Gandhi Vidyamandir's Arts, Science & Commerce College, Harsul, Dist. Nashik was conducted on 26th April, 2023. College has submitted necessary data and credentials for scrutiny. The activities and measures carried out by the college have been verified. The efforts taken by the college towards improvement in energy usage & energy efficiency is highly appreciated and commendable.

This Certificate is valid till 25th April, 2024.

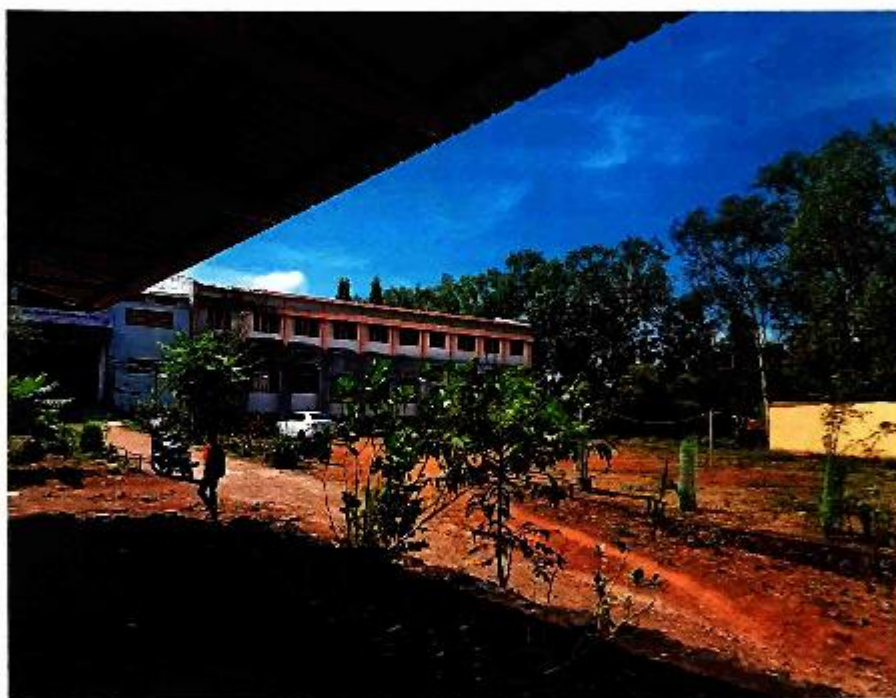
Certificate No.—EA/09/2023

Date—26th April, 2023.



Mukund V. Bhandare
Executive Director & Auditor,
For, MM Consultancy Services,
Nashik.

COMPREHENSIVE ENERGY AUDIT REPORT
FOR
MAHATMA GANDHI VIDYAMANDIR'S ARTS, SCIENCE &
COMMERCE COLLEGE, HARSUL, DIST. NASHIK.



DATE OF AUDIT APRIL 26, 2023.

AUDIT CARRIED OUT BY—

MM Consultancy Services, Nashik



INTRODUCTION.

PROFILE OF MGV's ARTS, SCIENCE & COMMERCE COLLEGE HARSUL.

Arts, Science and Commerce College, Harsul was established in June 1993 for providing higher education to the Adivasis (Tribal) and educationally deprived students. It is run by Mahatma Gandhi Vidyamandir, Malegaon Camp under the able guidance of General Secretary Hon.Dr.Prashant Hiray, Coordinator Hon.Dr.Apoorva Hiray and Principal Dr. M.R.Deshmukh. The college has been completing 23 years of service to the cause of higher education for tribals. Arts, Science and Commerce college Harsul holds the distinction of being the only institution providing higher education to the tribal students in the surrounding region. The Motto of the institution is 'Bahujan hitay Bahujan Sukhay'. Accordingly the college continues to impart higher education to the tribal students who live in remote, unapproachable area of Nashik district. Majority of the students are economically and socially deprived. Along with facilitating the participation of tribal students in higher education, its efforts are directed at providing holistic education that encourages critical and independent thinking.

The college is permanently affiliated to SPP University. It has undergone the process of Assessment and Reaccreditation by NAAC in 2016 and scored 'B' grade. The college is recently included under the sections of 2F and 12B of UGC Act 1956 in Oct.2010.

Principal's Desk

At Harsul College, we are imparting higher education to the Tribal students who are socio-economically deprived. This certainly is a very substantial and potent task. The college is the only institution providing the facility of higher education in the surrounding Tribal region. Harsul and surrounding 58 villages have been declared as Tribal Zone by the Government of Maharashtra. Majority of our students are from the Tribal families. For years together not a single member of these families is formally educated. Therefore our students face several problems and challenges to keep pace with today's competitive age. They have to work very hard to compete with their urban counterpart. Considering this, we have to take extra efforts to bring them to the expected level of education. This is a great challenge before us and our sincere efforts are directed



towards making our students competent enough to face the challenges of 21st century.

Vision, Mission & Objectives

Vision Enrichment of society by providing educational facilities to the tribal community.

Mission

To impart education to the Tribal students and make them more employable in the market.

Objective:

1. To provide education to the tribal students
2. To increase educational atmosphere.
3. To achieve academic and social excellence.
4. To increase the rate of female students.
5. To impart quality education
6. To improve stake holders relationships.
7. To make the learners more employable.
8. To decrease the rate of drop outs in the higher education in the tribal areas.
9. To create learner oriented atmosphere.

Sallient Features

- Arts, Science and Commerce college was established basically to impart higher education to the tribal students. The college is sincerely working to educate the tribal students and to create awareness among them about various socio-political and economical issues.
- More than 90% of the students belong to schedule tribes (S.T.)
- The college has 08 departments in Arts Faculty and Post graduate course M.A. in Marathi.
- The college has successfully organized 01 National level ,02 state level and 04 District level seminars in last 4 years.
- The college has support services like Library, Gymkhana, N.S.S., welfare Schemes for students, Internet etc.
- The college has very active N.S.S. Unit which organizes various activities such as Blood Donation Camp, Aids Awareness campaign, Special Winter Camp etc.



ACKNOWLEDGEMENT.

MM Consultancy Services Nashik is grateful to the Principal Dr. Motiram Raoji Deshmukh Sir & Management of Mahatma Gandhi Vidya Mandir's Arts, Science & Commerce College Harsul, 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 his coordination with College staff & a prompt assistance to us to ahead for this audit in time.

We are also grateful to MGVS College Team for their valuable inputs in data collection during our audit.

Our Sincere thanks to Dr. Deshmukh Sir Principal who provided us with adequate data & tech. information to make this audit successful. Efforts & initiatives taken by Deshmukh Sir to make College Campus Beautiful, Green & Energy efficient are really appreciated & we hope, that the same will be continued in future too.



ENERGY SCENARIO.

MGV's SPH College Campus is having electricity supply from MSEB Grid (LT Supply) which meets the power requirement of various sections/departments. Present Electrical MSEB Meter is not in working condition as average consumption of 178 Units is charged to campus since March 2022.

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 for both old & New Buildings about 200 KWH per Month maximum as indicated in the bill. 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.11 per KWH.

As informed by the principal, Solar unit is connected to GRID in this month only & solar generation & appropriate credit to college is expected to be reflected in MSEB Bill from April Bill onwards.

The entire campus including common facility centres are equipped with LED lamps and LED tube lights, except at few locations where these are already provided. 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.

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 is more than 1 as solar power generation from 10 Kw solar plant is estimated @ 1200 Units per Month. Considering the power consumption of college campus,



excess power generation can be exported to GRID & suitable credit can be obtained from MSEDCL. Present Import from the GRID should be Zero as evident from the above Table. Solar power should also be connected to old Building as well.

- 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.
- There is no reflection of Imported Units, Exported Units & Solar power generated in the electricity Bill issued by MSEDCL. Also it is highly recommended to record daily solar power generation in a register for a reference so that import, export & solar captive generation can be monitored on regular basis for verification.
- 100 % adaption to LED Energy Efficient lighting in the campus is recommended. It is however recommended to prepare a detailed report on this by college management on actual energy savings made, investment done & probable financial pay-back to present before central management.

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.

Details of Present Electrical Load Equipment wise.

ELECTRICAL LOAD IN THE CAMPUS

Sr.No.	EQUIPMENT	ELE.LOAD KW	NUMBERS	OPERATING HOURS	REMARKS
1	Tube Lights	20 W	23	10	ALL LED
2	Ceiling Fans	70 W	17	10	
3	Computers	--	10	4	Limited Use
4	Printers	--	5	1	Limited Use
5	Refrigerator	--	1	6	Limited Use
6	Air Cooler	--	1	6	Limited Use
7	Water Cooler	--	1	4	Limited Use
8	Bore well Motor	750 W	1	4	
9	Water Pumping Motor	750	1	4	

Most of the above load except lighting Fans & computer is for a very short time during the year & no special energy conservation required for this load.

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 Active BLDC 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.





APFC PANEL

The Power factor Improvement Unit

SPECIFICATION- DESIGN

As per IEC-61439,

Full Form :
Automatic power factor Control Panel

Application :
Reduce Lightbill Penalties



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 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



Money Isn't All You're Saving



CONCLUSION.

It was really our privilege & honor to work with the team of MGV's Arts, Science & Commerce College Harsul 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.

- Use of Renewable energy in the form of 10 Kw Solar Power Plant is noteworthy & is appreciated.
- Monitoring of solar power generation on day to day basis is highly recommended.
- Data in MSEDCL Bills is not clear as proper import, export & solar generation figures are not recorded. Since the solar generation is much higher than actual import of electricity from MSEDCL, an appropriate credit for excess units exported to MSEDCL should be availed by college management on regular basis. Also Solar power to be connected to old building as well.
- Proper preventive maintenance of solar panels on regular basis preferably weekly is highly recommended to optimize capacity utilization to generate minimum 1200 Units per month. Dust & other sticky materials on solar panels affects generation efficiency of solar plant & should be maintained to maximum by regular washing/Cleaning of solar panels.
- 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.
- All lighting in the campus are to be replaced with energy efficient LED lighting, which shall be commendable achievement of the college management.

We once again thank MGV 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.



NO VEHICLE DAY

A Report

Date: 01/01/2022

The college observed the no vehicle day once in a week to reduce the pollution caused by vehicles. All the teaching and non-teaching staff members and students in the college come by a public transport and students and staff members those located near the college they prefer to walk every Saturday is celebrated as No Vehicle Day.

The main purpose of celebrating this day is to sensitise the students about the importance of exercise such as walking and create the awareness about environment. There should be more usage of the public transport system, reduction in pollution caused by transportation, to reduce traffic on roads and to reduce road accidents.

This is not applicable to the checking squad of the department as well as the physically disabled employees and students of the college.




A handwritten signature in blue ink, appearing to read "Dr. Motiram R. Deshmukh".

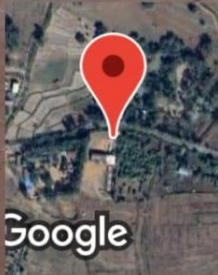
(Dr. Motiram. R. Deshmukh)
PRINCIPAL
M. G. Vidyamandir's
Art's, Science & Commerce College
Harsul, Tal. Tryambakeshwar Dist. Nashik

No Vehicle Day





 GPS Map Camera



Harsul, Maharashtra, India
4F85+H5X, Harsul, Maharashtra 422204, India
Lat 20.116834°
Long 73.458206°
08/07/23 02:28 PM GMT +05:30

Plastic Free Campus

Plastics are harmful to the environment and it is non-recyclable. The college has strictly followed the rules of plastic free campus and our students are also taking care of it. The college placed the number of dustbin in the campus and stick the notices of everywhere in the campus. Through this college gives the message to society that plastic is dangerous to environment.



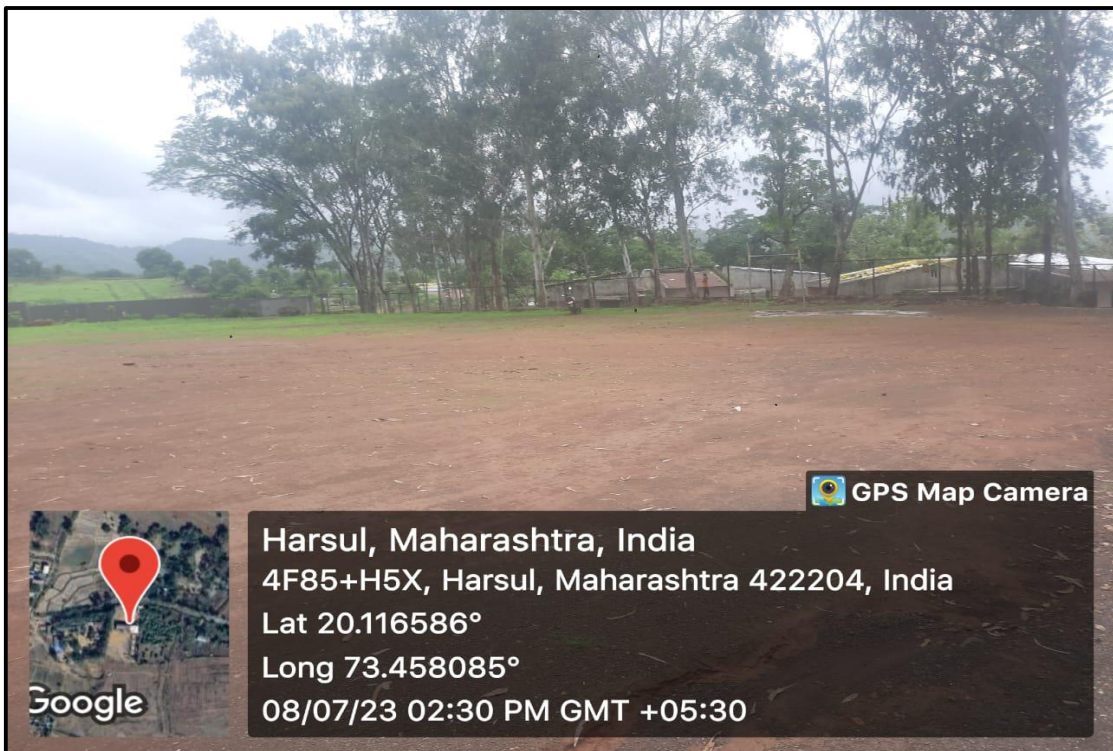
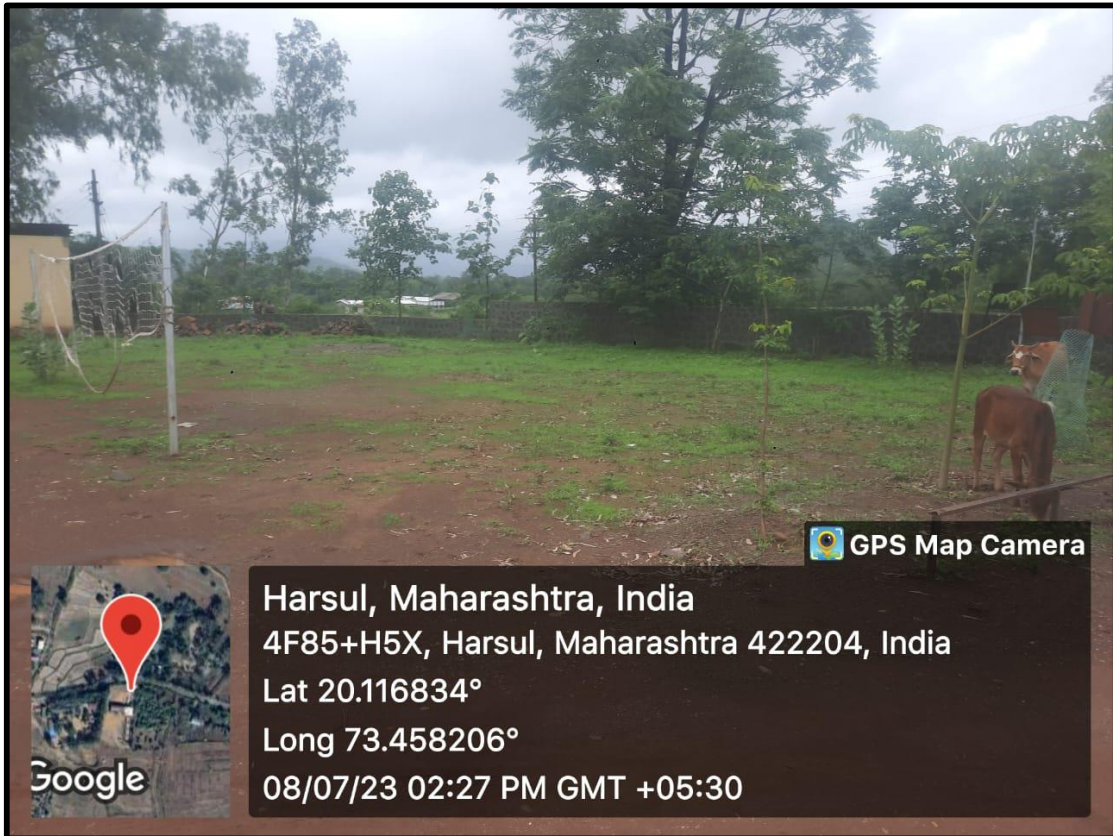
(Dr. Motiram. R. Deshmukh)

PRINCIPAL

M. G. Vidyamandir's
Art's, Science & Commerce College
Harsul, Tal. Tryambakeshwar Dist. Nashik



Plastic Free Campus





Plastic Free Campus



Plastic Free Campus

Plastic Free Campus





Founder

Karmaveer Bhoushab Hiray

**Mahatma Gandhi Vidyamandir's
ARTS, SCIENCE & COMMERCE COLLEGE**

(Affiliated to Savitribai Phule Pune University, Pune) ID No.PU/NS/ASC/048/(1993)

■ web : www.mgv.org.in/harsulcollege

■ Email : harsulcollege@gmail.com

Re-Accredited by NAAC with 'B' Grade

Date 01/07/2020

NOTICE

This is to inform that National Service Scheme (NSS) department of our college organize tree plantation program on **01 July 2020** at **10.00 am** on in our college campus. Volunteer's participation will be required for the same.

PRINCIPAL

M. G. Vidyamandir's
Art's, Science & Commerce College
Harsul, Tal.Tryambakeshwar Dist. Nashik



**MAHATMA GANDHI VIDYAMANDIR'S
ARTS, SCIENCE AND COMMERCE COLLEGE,
HARSUL
TAL- TRYAMBAKESHWAR, DIST- NASHIK**
[Affiliated to Savitribai Phule Pune University of Pune]



National Service Scheme Tree Plantation 2020-21

Details of the Program:

Date: 1st July 2020

Subject: Tree Plantation

President: Dr. R. P. Bhamare, Principal

Coordinator and Organizer of the Program: 1. Dr. Poonam Borse (P.O. N.S.S.)
2. Dr. Rajani Patil (P.O. N.S.S.)

Purpose of the Activity:-

The importance of trees in for the conservation of environment is a well-known fact hence NSS Department of our college conducted tree plantation in college campus. The students of the National Service Scheme Department of our college made and planted various trees in it.

The principal of the college, Dr. R.P. Bhamare urged college students to plant at least one tree, emphasizing the importance of trees and future needs. National Service Scheme Program Officer Dr. Poonam Borse explained the role and purpose behind tree planting to all the N.S.S. Volunteers. For this tree planting program, Principal of the college Dr. Bhamare along with all the teaching and non-teaching staff, volunteers of NSS and most of the students were present and the actual tree planting was done.



(Dr. M. G. Vidyamandir)
PRINCIPAL
M. G. Vidyamandir's
Art's, Science & Commerce College
Harsul, Tal. Tryambakeshwar Dist. Nashik



Outcome of the Program:

The program was a great success, and it created awareness about Environment and Tree Plantation. This initiative by NSS of Mahatma Gandhi Vidyamandir's Arts, Science, and Commerce College, Harsul was received very well by all participants.



(Dr. Manikam R. Deshmukh)
PRINCIPAL
M. G. Vidyamandir's
Arts, Science & Commerce College
Harsul, Tal. Tyambakeshwar Dist. Nashik



Founder



Karmaveer Bhau Sahab Hiray

**Mahatma Gandhi Vidyamandir's
ARTS, SCIENCE & COMMERCE COLLEGE**

(Affiliated to Savitribai Phule Pune University, Pune) ID No. PU/INS/ASC/048/(1993)

■ web : www.mgv.org.in/harsulcollege

■ Email : harsulcollege@gmail.com

Re-Accredited by NAAC with 'B' Grade

Date 01/08/2019

NOTICE

This is to inform that National Service Scheme department going to organize Tree Plantation Campaign on the occasion of birthday of Dr. Apoorva Hiray, on 01 August 2019 at 11.00 am on in college campus. Volunteer's participation will be required for the same.

PRINCIPAL

M. G. Vidyamandir's
Art's, Science & Commerce College
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National Service Scheme Tree Plantation

Details of the Program:

Date: 1st August 2019

Subject: Tree Plantation

President: Dr. M. R. Deshmukh, Principal

Coordinator and Organizer of the Program: 1. Mr. D.K. Mandavdhare (P.O. N.S.S.)
2. Dr. Poonam Borse (P.O. N.S.S.)

Purpose of the Activity: -

The importance of trees in the conservation of environment is a well-known fact hence on the occasion of the Birth day of Dr. Apoorva Hiray, on 1st August 2019, NSS Department of our college conducted tree plantation in college campus. The students of the National Service Scheme Department of our college made and planted various trees in it.

The principal of the college, Dr. D. M.R. Deshmukh urged college students to plant at least one tree, emphasizing the importance of trees and future needs. National Service Scheme Program Officer Mr. D.K. Mandavdhare explained the role and purpose behind tree planting to all the N.S.S. Volunteers. For this tree planting program, Principal of the college Dr. M.R. Deshmukh along with all the teaching and non-teaching staff, volunteers of NSS and most of the students were present and the actual tree planting was done.



(Dr. M. R. Deshmukh)
PRINCIPAL
M. G. Vidyamandir's
Arts, Science & Commerce College
Harsul, Tal. Tryambakeshwar Dist. Nashik



Outcome of the Program:

The program was a great success, and it created awareness about Environment and Tree Plantation. This initiative by NSS of Mahatma Gandhi Vidyamandir's Arts, Science, and Commerce College, Harsul was received very well by all participants.



A handwritten signature in blue ink, appearing to read "Dr. Molamma R. Deshmukhi".

(Dr. Molamma R. Deshmukhi)

PRINCIPAL

M. G. Vidyamandir's
Arts, Science & Commerce College
Harsul, Tal. Taranaholpur Dist. Nashik



Founder

Karmaveer Bhausaheb Hiray

**Mahatma Gandhi Vidyamandir's
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(Affiliated to Savitribai Phule Pune University, Pune) ID No.PU/NS/ASC/048/(1993)

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• Email : harsulcollege@gmail.com

Re-Accredited by NAAC with 'B' Grade

Date 01/07/2017

NOTICE

This is to inform that National Service Scheme (NSS) department of our college organize tree plantation as per order of forest and environment department, Nashik on **01 July 2017 at 11.30 am** in college campus. The student of NSS participation will be required for the same.

PRINCIPAL

M. G. Vidyamandir's
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National Service Scheme Tree Plantation

Details of the Program:

Date: 1st July 2017

Subject: Tree Plantation

President: Dr. M. R. Deshmukh, Principal

Coordinator and Organizer of the Program: 1. Prof. Ajay Ahir (P.O. N.S.S.)

2. Dr. Poonam Borse (P.O. N.S.S.)

Purpose of the Activity:-

The importance of the trees in for the conservation of environment is a well-known fact. As per the order of Forest and Environment Department, Nasik, all kinds of native and foreign trees were planted in the college premises. The students of the National Service Scheme Department of our college made and planted various trees in it.

The principal of the college, Dr. D. M.R. Deshmukh urged college students to plant at least one tree, emphasizing the importance of trees and future needs. National Service Scheme Program Officer Dr. Poonam Borse explained the role and purpose behind tree planting to all the N.S.S. volunteers.

For this tree planting program, Principal of the college Dr. M.R. Deshmukh along with all the teaching and non-teaching staff, volunteers of NSS and most of the students were present and the actual tree planting was done.



(Dr. Mahim R. Deshmukh)

PRINCIPAL

M. G. Vidyamandir's
Arts, Science & Commerce College
Harsul, Tal Tryambakeshwar Dist. Nashik

Principal, Faculty & Students while planting trees with the distinguished villagers in the college premises





Outcome of the Program:

The program was a great success, and it created awareness about Environment and Tree Plantation. This initiative by NSS of Mahatma Gandhi Vidyamandir's Arts, Science, and Commerce College, Harsul was received very well by all participants.




(Dr. Modiraju, B. Doshmukhi)
PRINCIPAL
M. G. Vidyamandir's
Art's, Science & Commerce College
Harsul, Tal. Jayambekudawa Dist. Nashik

Clean and Green Campus Initiative

Tree Plantation in college Campus by Staff and Students:













Beyond the College Campus Environmental Promotion Activities

Beyond the campus environmental promotion activities

1: Cleanliness campaign in Hattipada village



2: Cleanliness campaign in Harsul police station







4: Under the Silver Jubilee Programme cleanliness campaign rally





4: Tree Plantation Activity beyond college campus



5: Sewage Disposal

