

Late. Babasaheb Varhade Education Society, Amravati's
**Sant Gadge Maharaj Arts, Commerce &
Science College, Walgaon**
“NAAC Accredited C Grade”

GREEN, ENVIRONMENT AND ENERGY AUDIT REPORT 2020-2021



Prepared by

IQAC
Sant Gadge Maharaj Arts, Commerce & Science College, Walgaon
And

Shri Shri Enviro Consultancy, Amravati

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Date,

To,
Principal,
Sant Gadge Maharaj Arts, Commerce & Science College,
Walgaon

It is to certify that we Shri Shri Enviro Consultancy, Amravati conducted “GREEN, ENVIRONMENT AND ENERGY AUDIT” of the campus of Sant Gadge Maharaj Arts, Commerce & Science College, Walgaon for the Academic Year 2020-2021.

S. V. Bute
Proprietor

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1. Introduction

Earth is the only planet in the universe to sustain life because of its environment. No life can exist without suitable environment and so no human being. Increasing population, civilization, industrialization and urbanization on the earth have brought this environment under the great pressure. Revolution in the field of science and technology to make the life more comfortable has made the environmental degradation as transboundary problem which has degraded air, water, soil and ecosystem as whole. Polluted environment leads to the adverse effects on the health of animals, plants and human being. Booming technological fight in the past decade has affected environment very adversely. Environmental issues have now become a world-wide concern and the focus of discussion in a variety of forums both at national and international levels.

India is a developing country and adapting science and technology for its progression. There is improvement in the life style but on the other side it is creating exploitation of the environment. Luxurious life style is becoming environmental risk which may render it unsuitable for future generation.

All the issues related to environment are rooted in economic and social policies of the country and therefore they occur at all levels from local, national to global. Most of the foreign countries are working on these issues sincerely and systematically. They have framed very stringent policies for environment protection and executed them successfully. Even the country like Maldives called attention of the world by convening its meeting of cabinet under the sea. However, besides having tradition of worshipping environment, we, Indian are overlooking the challenging and burning issues of environmental protection. Environmental issues remained just part of the debate and discussion but rarely any action is taken in systematic way. It is assumed by the society that the responsibility of protection of environment lies with government and its concern agencies. Even majority of industries in India are focusing on their production and marketing policies but not on the control of environment hazards that they are being responsible.

Generally, every constituent of our society is responsible for environment crises and it is the duty of each of us to strive hard for its conservation. If we start with ourselves, it will definitely create a positive benchmark of the success in the journey of environment protection. Green audit is the prime solution of this scenario.

Green audit is the tool of management system used methodologically for protection and conservation of the environment. It is also used for the sustenance of the environment. The audit suggests different standard parameters, methods and projects for environmental protection. It can be adopted by any industry, organization, institute and even by housing complex. The green audit is useful to detect and monitor sources of environment pollution and it emphasizes on management of all types of wastes, monitoring of energy consumption, monitoring of quality and quantity of water, monitoring of hazards, safety of stakeholders and even the management of disasters.

Environmental Audit in Academic Institutes

In 2006, Government of India has declared the National Environment Policy 2006 and made green audit mandatory to each industry. According to the policy it is a response to India's national commitment to a clean environment, mandated in the Constitution in Articles 48 A and 51 A (g), (DPSP) strengthened by judicial interpretation of Article 21 (National Environmental Policy 2006). It is recognized that the maintenance of the healthy environment is not the responsibility of the state alone. It is the responsibility of every citizen and thus a spirit of partnership is to be realized through the environment management of the country. The process of environmental audit was formalised by Supreme Audit Institution (SAI) according to the guidelines given in Manual of Standard Orders (MSO) issued by Authority of the Controller and Auditor General of India 2002. The Supreme Audit Institution of India is the highest national Institution of auditing in the country.

By realizing the need of responsibility towards environment, NAAC, an autonomous body under UGC has added the concept of environmental audit in accreditation methodologies of universities and colleges.

2. About College

The college run by Late Babasaheb Varhade Education Society, Amravati was established in sept 1991 by the founder president Late Dr. Anil Bhausaheb Varhade, Ex Education Minister of Maharashtra State. Influenced by the thoughts and teachings of Sant Gadge Baba, he felt the need to provide higher education to the unprivileged section of the society. He chooses the place for college where the wandering Saint breathed his last breath. Premises of college is situated on the bank of River Pedhi and surrounded by greenery with adequate facilities for students. The college have spacious Class rooms, Laboratories, Teaching –learning equipment's, Playground and Well-Equipped Library.

College affiliated to Sant Gadge Baba Amravati University, Amravati and running B. A. & B.Com courses. Under the U.G.C scheme college running carrier-oriented programmes like Fashion Designing, Computer and Information Technology. College is recognized under UGC 2f- 12b list & accredited by NACC in C+ grade

2.1 Vision

To strive for the academic excellence and make students self-reliant and competent enough to face the challenges ahead. To propagate value-based education, to associate them with natural, social, cultural and global environment. To impart quality education, training so that potentiality should make them complete human being with committed and competent nature to face the environment of globalization. We want to shape the personalities of students by participating research work as well as extension work for the society so that students should be with scientific temper and research oriented.

2.2 Goals and Objectives

Following are the goals and objectives of college

- To improve the quality of education through sustained efforts to achieve excellence.
- To make students competent enough to be self-reliant.
- To make education an instrument of social change.
- To create in students a sense of self respect and dignity among poor and oppressed.
- To promote and preserve democracy, equality and social justice.
- To make them realize the significance of diligence, perseverance and hard work.
- To activate a sense of patriotic feeling and make students the contributor to the development of nation.
- To develop skill, efficiency, creativity, self-discipline and self-confidence among the students.
- To impart the knowledge of social awareness, cultural values and challenges in higher education.
- To make students able in problem solving, decision making and to face the unforeseen situation.

2.3 Facilities

Library

College has an independent Library section. Library have 6684 books which includes Text books, Encyclopaedias, Dictionaries, Reference Books and books related with personality Development, Literature, Competitive Examination etc. College Library also subscribe 16 Journals, Magazines of National & International reputation with newspapers in Marathi, English and Hindi. Library have spacious reading room that open 10.30 A.M to 5.30 P.M.

Total Number of Books :6684

Back – Volumes of Journals : 98

Journal & Magazines : 08

News Papers : 02

Library



Network Resource Centre:

The college establish Network Resource Centre from the grants received from U.G.C in NRC there is VPN Broad Band facility. With this facility students and faculty can access vast amount of information available through Internet.

Network Resource Centre



Computer Laboratory:

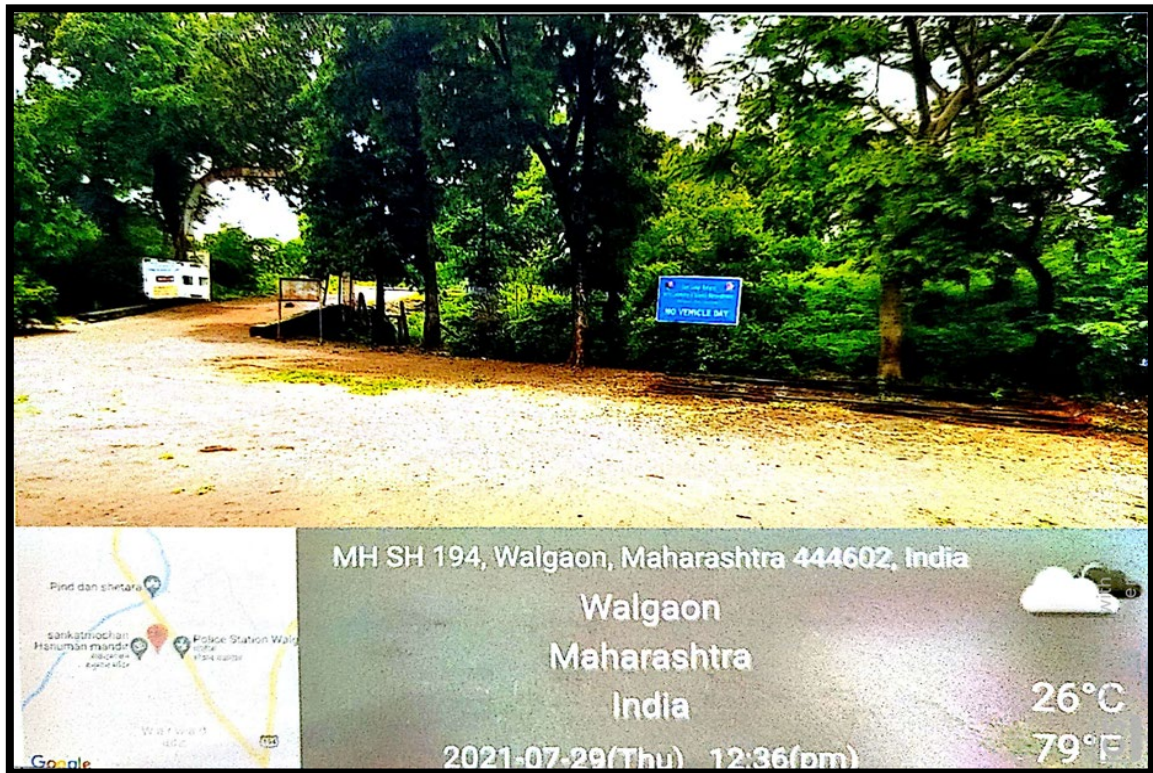
College has computer laboratory, with the grants received from UGC existing laboratory further developed. Now there are approximately 30 computers available for students with these facilities. Students can learn new/modern computer techniques.

Computer Laboratory

Playground:

College have spacious area for playground. The significance of sports, extracurricular activities with academics are cultivated among students therefore college developed a playground.

Playground



NSS:

The NSS unit of the college accommodates One Hundred (100) volunteers. The students enrolled to the NSS unit will have to obey the rules and regular camp, special camp, workshops, personality development programmes, Environmental awareness programmes are its parts which organized by NSS unit.

NSS



English Language Laboratory:

Under the UGC scheme college developed English language laboratory with this facility student can improve their English-speaking skill. In addition to this college have spacious lecture rooms, conference room, and common room for girls. A good Sound-System with Audio-Visual teaching aid like LCD projectors & screens.

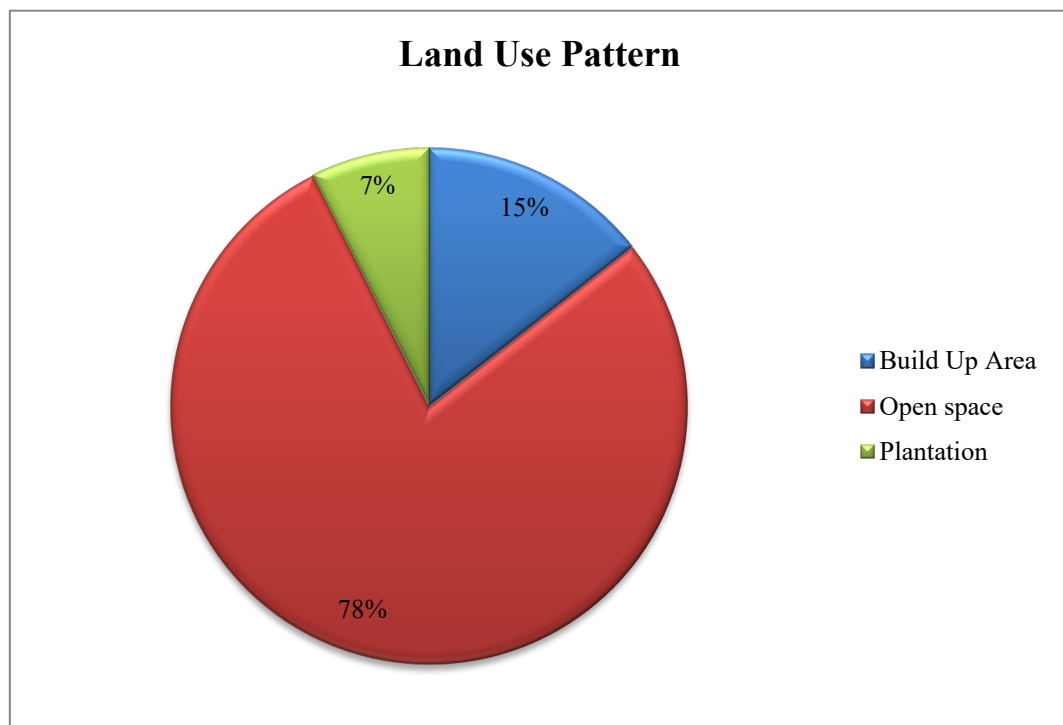
2.4 Land Use Data

Sant Gadge Maharaj Arts, Commerce & Science College, Walgaon is within the geo-position between latitude 21°00'72.0"N and longitude 77°70'61.9"E in Walgaon, Amravati District, Maharashtra, India. It encompasses an area of about 13541 sqmeter. The college has following land use pattern:

Categories of Land Use Area in sqmeter

Build Up Area	1950
Open space	9693 + 898 = 10591
Plantation	1000
Total Area	13541

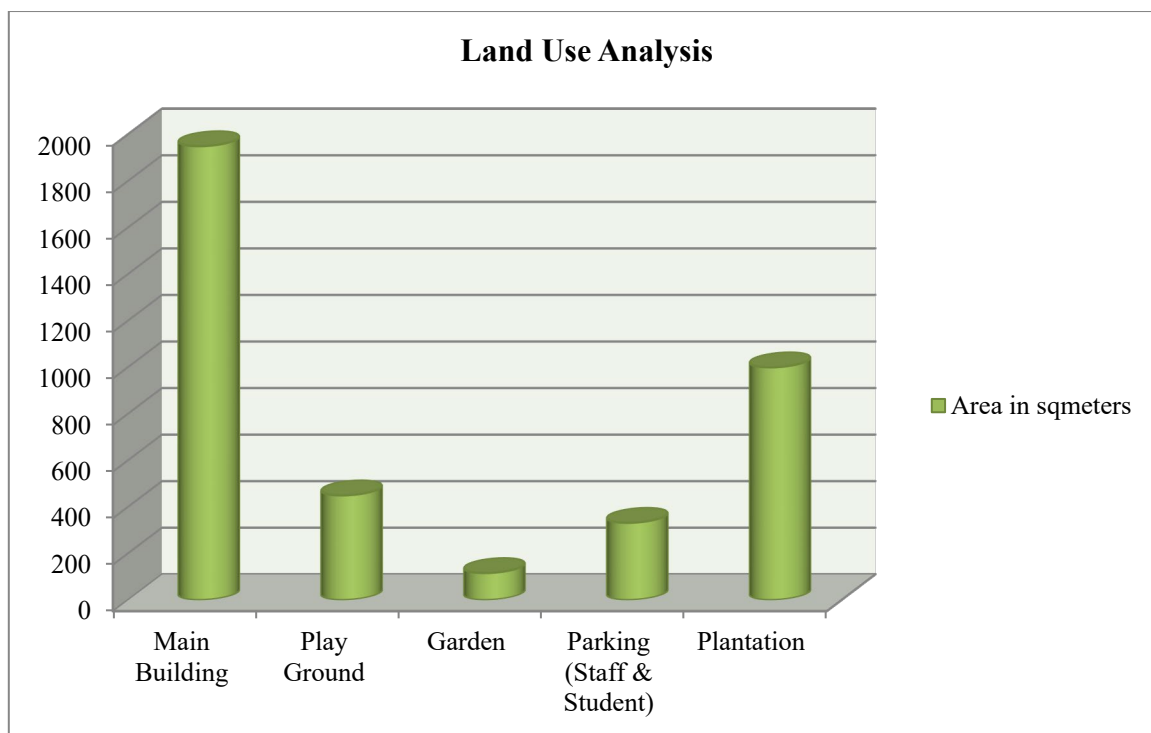
The total area of Sant Gadge Maharaj Arts, Commerce & Science College is 13541 sqmeter out of which the build-up area 15 % (i.e. 1950 sqmeter), open space area 78% (i.e. 10591) and plantation area is 7% (i.e. 1000 sqmeter).



2.5 Land Use Analysis

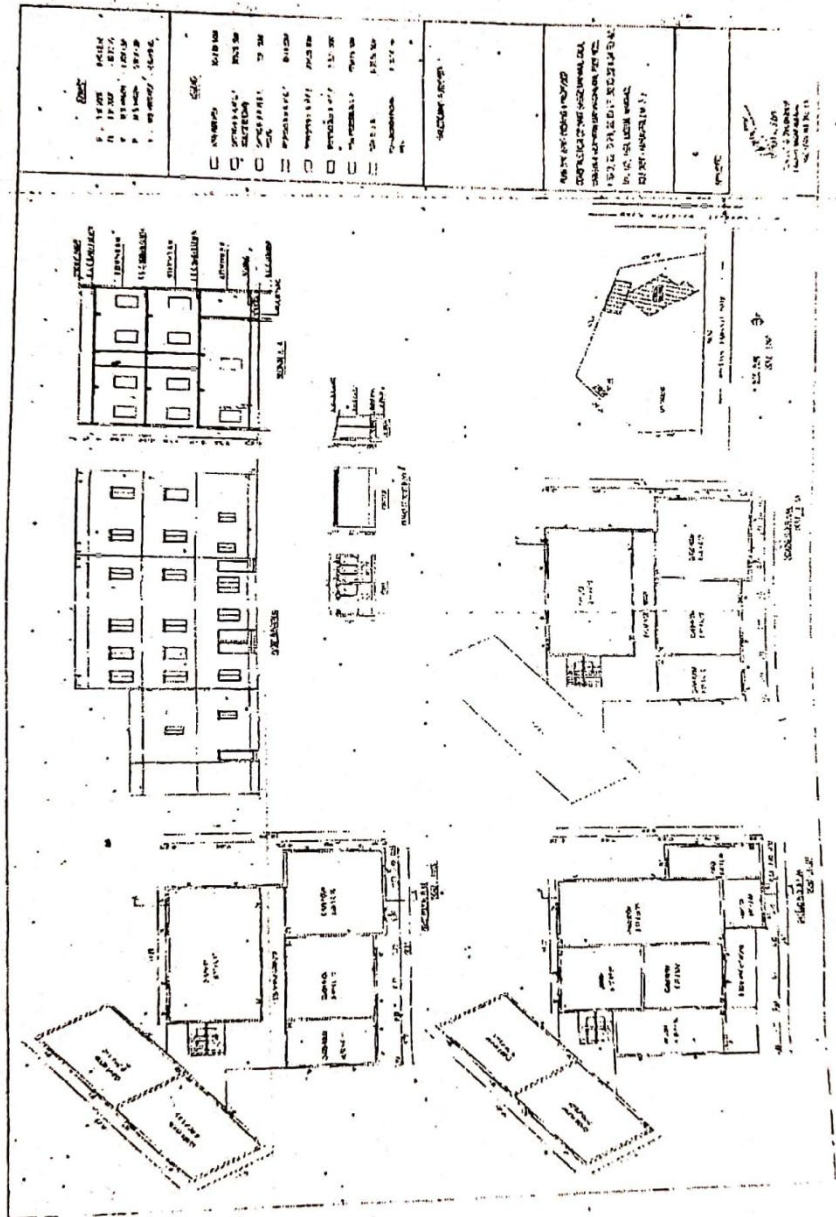
Following are the land use analysis of Sant Gadge Maharaj Arts, Commerce & Science College:

Category of Land Use	Area in sqmeters
Main Building	1950
Play Ground	450
Garden	116
Parking (Staff & Student)	332
Plantation	1000



College Layout Plan

Annexure - V :- MASTER PLAN



प्राचार्य
संत गाडगे महापाल कला, वाणिज्य
व विज्ञान महाविद्यालय, वलगाव

(Signature)

PRINCIPAL
Sant Gadge Maharaj Arts,
Commerce & Science College,
WALGAON Dist. Amravati.

(Signature)

सहायक प्राचार्य
संत गाडगे महापाल कला, वाणिज्य
व विज्ञान महाविद्यालय, वलगाव



CS Scanned with CamScanner

(Signature)

Lecturer
Sant Gadge Maharaj Arts, Commerce
& Science College, WALGAON.

3. Aims and objectives

To nurture environmentally friendly management in college following aims and objectives were formulated

- To recognize the initiative taken by organization towards environment.
- To secure the environment and cut down the threats posed to human health.
- To provide baseline information to enable college to evaluate and manage environmental change, threat and risk.
- To recognize, diagnose and resolve the environmental problems.
- To recognize the effects of a college on the environment and vice versa.
- To suggest the best protocols for sustainable development college and environment.
- To set the procedure for disposal of all types of wastes.
- To reduce energy consumption.
- To give preference to the most energy efficient and environmentally sound appliances.
- To train all stakeholders of the college and empower them to contribute and participate in the environmental protection.
- To make sure that rules and regulations are taken care to avoid the interruptions in environment.

4. Methodology

For the current study, the secondary data is used. It is obtained from the environmental audit reports of colleges across India. The primary data regarding some of the environmental related practices was also generated through secondary sources. Institutions related to higher education are only considered during the present study.

To achieve the mentioned objectives of Green, Environmental and Energy Audit of Session 2020-2021 Sant Gadge Maharaj Arts, Commerce & Science College and Shri Shri Enviro Consultancy, Amravati adapted the following methodology. It includes three stages viz. pre-audit stage, audit stage and post audit stage.

Pre-Audit Stage

In pre-audit state discussion on environment policy of a college and preparation of questionnaire for audit work is performing. The policy is the reflection of goals, objectives, scope and priorities of the college related to environment sustenance. The target areas of green auditing, audit team and assignment of responsibility were established.

Audit Stage

The audit stage include survey by questionnaire, review of documents and records, review of policies, interviewing of key persons (stakeholders), physical inspection of college campus, monitoring and analysis of air, water, noise quality, biodiversity, energy consumption, solid waste generation and disposal etc.

Post-audit Stage

The post-audit stage is the role of an auditor. The auditor considers all the facts and observations of the audit together in concern with green, environmental and energy Audit. The auditor evaluates the findings as per the standard procedure. The auditor prepares a brief report of the audit along with recommendations.

GREEN AUDIT

5. Floral Diversity of College

Sant Gadge Maharaj Arts, Commerce & Science College, Walgaon is within the geo-position between latitude 21⁰⁰ 72.0 N and longitude 77⁰⁰ 61.9 E in Walgaon on the bank of Pedhi river. It encompasses an area of about 13541sqmeter Acres.

The college area is immensely diverse with a variety of tree species performing a variety of functions. Most of these tree species are planted in different periods of time through various plantation programmes organised by the college. The trees of the college have increased the quality of life, not only the college fraternity but also the people around of the college in terms of contributing to our environment by providing oxygen, improving air quality, climate amelioration, conservation of water, preserving soil, etc. Many species of birds are dependent on these trees mainly for food and shelter. Nectar of flowers and plants is a favourite of birds and many insects. Leaf – covered branches keep many animals, such as birds and squirrels, out of reach of predators.

Table: List of tree species of Sant Gadge Maharaj Arts, Commerce & Science College

S. No.	Botanical Name	Family	Common Name	Total
1	Saraca asoca.	Fabaceae	Ashok	11
2	Azadirachta indica	Meliaceae	Neem	43
3	Delonix regia	Fabaceae	Gulmohar	05
4	-	-	Plant A	71
5	-	-	Plant B	03
6	Vachellia nilotica	Legumes	Babul	14
7	Ziziphus mauritiana	Buckthorns	Bor	17
8	Balanites aegyptiaca	Balanitaceae	Hinganbet	04
9	Ficus religiosa	Mulberry	Pimpal	03
10	-	-	Plant C	12
11	Tectona grandis	Verbenaceae	Sag	07
12	Terminalia catappa	Combretaceae	Kadu Badam	06
13	Leucaena leucocephala	Legumes	Subabul	05
14	Ficus benghalensis	Moraceae	Vad	01
Total				202

Azadirachta indica



Delonix regia



Ficus religiosa



Tectona grandis



6. Faunal Diversity of College

Sant Gadge Maharaj Arts, Commerce & Science College, Walgaon is within the ge-position between latitude 21⁰⁰ 72.0 N and longitude 77⁰ 70 61.9 E in Walgaon, Amravati District, Maharashtra, India. College located at the bank of Pedhi river and surrounded by agricultural land. College campus consists of main building, play ground, open place etc. So campus green cover, openness and availability of food and water is suitable for different faunal species. In the fauna, several species of butterflies, dragonflies, moths, spiders, amphibians, reptiles, birds and mammals have been recorded and documented from the College campus. Many animals are present in campus are dependent on the trees mainly for food and shelter. Flowers and fruits are eaten by monkeys, and nectar is a use by birds and many insects. Leaf – covered branches of tree keep many animals, such as birds and squirrels, out of reach of predators.

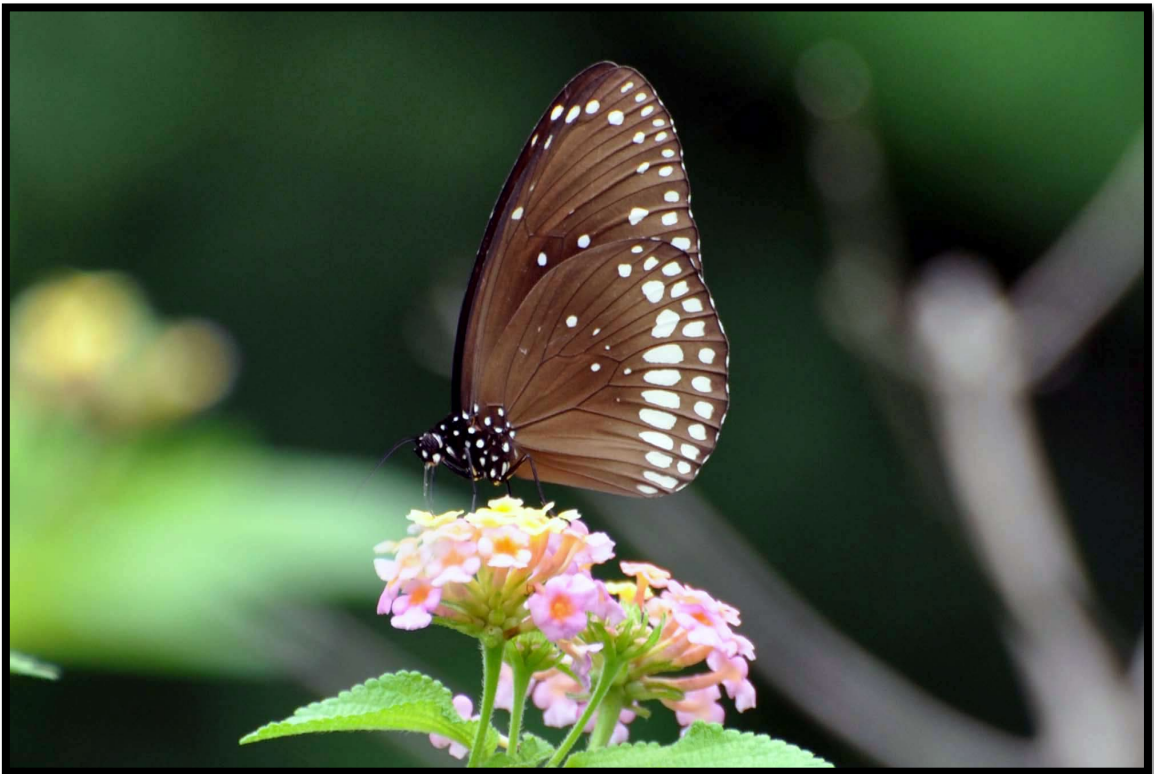
Alexxandrine Parakite



White-breasted Kingfisher



Common Crow



Lime Butterfly



Long-legged Marsh Glider (*Trithemis pallidinervis*)



Five striped Squirrel



Hanuman Langur



7. Solid Waste Management

Sant Gadge Maharaj Arts, Commerce & Science College, Walgaon is basically Arts and Commerce cCollege, overall population of college is 547. Mainly papers and tree dropping solid waste is a major solid waste generated in the college campus. Overall college campus having open area with plantation so tree dropping waste such as leaves become naturally mix with soil and decomposed. The college has adopted pit composting activity in open space on 300 sqft lands for tree leave in campus. The main purpose of this is to reduce biodegradable waste in the college campus. Manual generated through pit composting activity is utilised for gardening activity. It is observed that very less quantity of e-waste and plastic waste generation in college campus. NSS unit of the College has conducted several awareness activity and programmes in the college regarding awareness and management of solid waste. Paper waste can be reduced by maximizing e-communication and e-learning. College adapted the use of one side papers is for reducing paper waste.

Pit Composting



ENVIRONMENTAL AUDIT

Water management

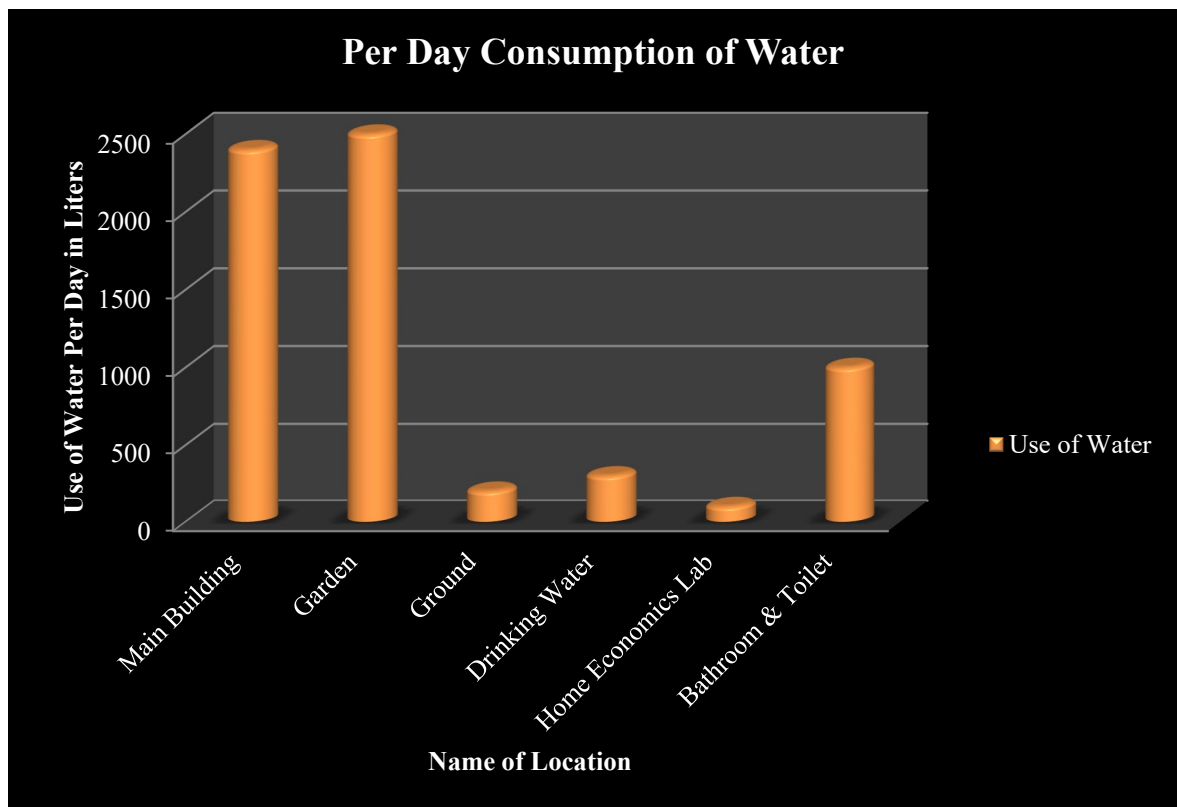
Water is a very valuable resource and everybody is gaining the awareness about the value of water. It is observed that Borewell are only one source of water in college campus. Water is used for Drinking Purpose, garden, ground, Home Economics Lab, bathroom and toilet purpose. During the survey no loss of water is observed neither by leakages nor by over flow of water from overhead tanks in all over the college campus. For drinking purpose water purifier water is used.

On an average the total use of water in the Sant Gadge Maharaj Arts, Commerce & Science College is 6500 L/Day, which include 2400 L/Day for main building, 2500 L/Day for gardening purpose and 1000 L/Day for bathroom and toilet etc.

Per Day Use of Water

Following are the campus location wise capacity of storage tank and per day consumption of water in college campus

Sr. No.	Name of Location	Source of Water	Use Per Day In Liters
1	Main Building	Bore Well	2400
2	Garden	Bore Well	2500
3	Ground	Bore Well	200
4	Drinking Water	Bore Well	300
5	Home Economics Lab	Bore Well	100
6	Bathroom & Toilet	Bore Well	1000



Above graphical presentation represent the per day consumption of water in college campus. It is observed that maximum water use in main building for performing differ activity and minimum use of water in Home Economics Lab. It is observed that water use is reduces during COVID 19 pandemic period because all academic activity in performing by online way in student physical absence.

College and enough open space and plantation for rainwater is naturally percolated in ground. Also college build up roof rain water harvesting unit at back side of main building near bore well it also help for recharging ground water.

Roof Rain Water Harvesting Unit



9. Noise Management

Noise pollution is one of the biggest problems of our society. Unwanted sound or sound at wrong place at wrong time is considered as a noise pollution. The noise level of Sant Gadge Maharaj Arts, Commerce & Science College campus measurement periodically. College is located at outside the residential area on road side. There are no any major source of noise is observed in college campus other that vehicular activity of college staff and students. Outside road transportation is not consider in noise level measurement. Due to COVID 19 lockdown most of the duration of 2020-2021 academic session is conducted online so only staff vehicle are present in college campus. Overall noise level is within the permissible limit provided by CPCB.

It is observed that there is a no need of performing air audit because college have more open space and plantation in campus area so air quality of college is good. Total population of college is approximately 547 and most of the student use bicycle. Other than college staff and student vehicles no any other source of air pollution is observed.

ENERGY AUDIT

10. Energy Management

Main energy source in campus is electricity of MSEB. Electricity utilized for performing different academic activities in all department, library, office etc. It is observed that total electricity consumption of the college for different purposes is approximately 436kwh/month. During on site visit major consumption electric appliances like fan, light, bore well machine, office appliances like computer etc. are notated. Other than bore well machine no any source of high electricity consumption is found out. College adapted the use of CFL and LED bulbs for lighting purpose and eco-friendly electric appliances.

11. Conclusion

For the academic session 2020-2021 Green, Environment and Energy Audit of Sant Gadge Maharaj Arts, Commerce & Science College is performed by Shri Shri Enviro Consultancy, Amravati with the help of college IQAC committee.

The college run by Late Babasaheb Varhade Education Society, Amravati was established in sept 1991 by the founder president Late Dr. Anil Bhausaheb Varhade, Ex Education Minister of Maharashtra State. Influenced by the thoughts and teachings of Sant Gadge Baba, he felt the need to provide higher education to the unprivileged section of the society. Sant Gadge Maharaj Arts, Commerce & Science College, Walgaon is within the geo-position between latitude 21°00' 72.0" N and longitude 77°07' 61.9" E in Walgaon, Amravati District, Maharashtra, India. It encompasses an area of about 13541 sqmeter.

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In the fauna, several species of butterflies, dragonflies, moths, spiders, amphibians, reptiles, birds and mammals have been recorded and documented from the College campus. Many animals are present in campus are dependent on the trees mainly for food and shelter. Flowers and fruits are eaten by monkeys, and nectar is a use by birds and many insects. Leaf – covered branches of tree keep many animals, such as birds and squirrels, out of reach of predators.

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very less quantity of e-waste and plastic waste generation in college campus. NSS unit of the College has conducted several awareness activity and programmes in the college regarding awareness and management of solid waste.

Regarding water management it is observed that Bore well are only one source of water in college campus. Water is used for Drinking Purpose, garden, ground, Home Economics Lab, bathroom and toilet purpose. During the survey no loss of water is observed neither by leakages nor by over flow of water from overhead tanks in all over the college campus. For drinking purpose water purifier water is used.

There is no any other source of noise pollution and air pollution is observed in college campus other that vehicular activity of college staff and student.

Main energy source in campus is electricity of MSEB. Electricity utilized for performing different academic activities in all department, library, office etc. It is observed that total electricity consumption of the college for different purposes is approximately 436kwh/month.

12. Recommendations

- The limited the use of air-conditioners in college campus.
- Prefer purchasing of more energy efficient equipment for laboratory and college purpose.
- The College should improve its monitoring and reporting of energy usage.
- Conduct switch off drills at regular intervals and fix its responsibility on teaching / non teaching staff.
- Save electricity by proper maintenance of the wiring and electrical equipment, maintenance of electrical appliance and fitting is essential.
- Adopt solar power to light up the roads, exterior site of campus section.
- Important and confidential papers after their validity to be sent for pulping.
- Ban of plastic carry bags in college campus.