

GREEN AUDIT

2019-21

AUDIT REPORT

Studied for

Ashti Taluka Shikshan Prasarak Mandal' s

Adv. B. D. Hambarde Mahavidyalaya

MH SH 142, Ashti – 414203

Analysed by



23 November 2021

Disclaimer

Green Audit Team has prepared this report for **Ashti Taluka Shikshan Prasarak Mandal's Adv. B. D. Hambarde Mahavidyalaya, MH SH 142, Ashti – 414203** based on input data submitted by the College analysed by the team to the best of their abilities.

The details have been consolidated and thoroughly studied as per the various guidelines for Green Buildings available in National and International Standards; the report has been generated based on comparative analysis of the existing facilities and the prerequisites formulated by various standards. The inputs derived are a result of the inspection and research. These will further enhance and develop a Healthy and Sustainable Institution.

These can be implemented phase wise or as a whole depending on the decision taken by the Hon'ble Management and College. The warranty or undertaking, expressed or implied is made and no responsibility is accepted by Audit Team in this report or for any direct or consequential loss arising from any use of the information, statements or forecasts in the report.

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The Report is prepared by the Team of Greenvio Solutions under their brand and department – Sustainable Academe as Consultancy firm along with Ar. Nahida Shaikh as an Accredited Green Building Professional.

Greenvio Solutions

Developing Healthy and Sustainable Environments

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Acknowledgement

Green Audit Assessment Team thanks the **Ashti Taluka Shikshan Prasarak Mandal's Adv. B. D. Hambarde Mahavidyalaya Ashti** for assigning this important work of Green Audit. We appreciate the cooperation extended to our team during the entire process.

Our special thanks are due to **Er. Kishor B. Hambarde**, Chairperson; **Shri. Atul. M. Meher Sir**, Secretary and everyone from the Management.

Our heartfelt thanks to Chairperson of the entire process **Prin. Dr. Sopan Raosaheb Nimbore Sir**, Member Secretary and **Mr. Niwrutti Narayan Nanwate Sir**, Coordinator, IQAC for their valuable inputs.

We are also thankful to **College's Task force the faculty members** who have collected data required.

The kind gesture for the inventory and data collection of the Administrative Members is quite commendable.

We highly appreciate the assistance of Supervisor; Electrical Department and College Team for their support while collecting the data.

Sustainable Academe

Brand of Greenvio Solutions, Palghar District, Maharashtra- 401208

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1. Introduction

1.1 About Ashti Taluka Shikshan Prasarak Mandal

The Society has implemented the goal of educating the students in the best way possible by uplifting the academic status of the students through quality education and adopting the local village for overall community development. Meticulous joint efforts of the students and staff have made the institution one of the most sustainable premises in the locality.

1.2 Vision and Mission Statement of College

Our Vision

- **A strong free minded and capable youth with social bonding**
- Excellence in higher education
- Empowerment through knowledge
- Inclusive growth for socio-economic change

Our Mission –

- A dynamic approach with firm belief in efficiency and hard work
- To empower students with relevant knowledge
- To achieve innovation in teaching, learning and research
- To facilitate optimum use of human and natural resources
- To create awareness on human rights, value system.

1.3 Institution and the surrounding premises

Ashti Taluka Shikshan Prasarak Mandal' s Adv. B. D. Hambarde Mahavidyalaya is located in rural area at Ashti, Tai. Ashti, Dist. Beed. It is one of the most socio-economically, educationally backward and drought affected regions in Beed district of Marathwada region. Agriculture is the prime occupation of people in the locality. The financial capacity and per capita income of the people is remarkably low. Irregular and less rainfall renders the masses to migrate to sugar factories for sugarcane cutting.

The Premises is situated amidst the landscape serene with immense peace and calmness in the surroundings. The college is surrounded by Residential areas on all sides. There is a frontal approach which provides quite a beautiful appreciation space while approaching the premise. The location of college is feasible to the nearby essential amenities such as Public Health Center, Fire Station, Civic body-Public administrative buildings, Recreational gardens and Police Station.

The aim of the college is to continuously enhance the teaching methods in order to provide students with an opportunity for their all-round development. **It strives for excellence in Holistic development for Students..** It makes an effort to induce passion for learning along with the inspiration for decisive thinking and assessment, thereby helping them to become the best professionals in life.

The institution offers the following courses affiliated to Dr. Babasaheb Ambedkar Marathwada University, Aurangabad.

- **Graduation** - Bachelor of Arts (B.A.), Bachelor of Commerce (B. Com), Bachelor of Science (B. Sc), Bachelor of Computer Applications (B.C.A.)
- **Post-Graduation** – Masters of Arts (M.A. in Marathi, Hindi, History) and Masters of Science (M.Sc. in Organic Chemistry), M .Sc. in Mathematics and M.Sc. in Computer Science
- **Vocational** – B. Voc (Beauty and Wellness)
- **Preparatory – B. A. and M.A. (Marathi and English)**
- **Study Center** – Affiliated to Yashwanterao Chavan Maharashtra Open Universirt , Nashik B.A. and M.A (Marathi and English)
- **Diploma courses** – Under N.S.Q.F. related to Skill development
 - Automobile technology
 - Accounting & Taxtion
 - Web page designing & development
 - ICT
 - Organic Farming
- **Cerificate courses** – There are following courses are offered
 - E-Commerce
 - Tourism

- Spoken English
- **Classes** – Civil Service Exam preparation
- **Interviews in the premise for jobs**

The College aspires at training young women and men to be competent, committed and compassionate and lead in all walks of life. It has the following objectives.

- To improve personality of the student.
- To inculcate civic responsibilities and social awareness among students.
- To identify and improve the potential inculture, sports and work to uplift them.
- To create national integration among the students.
- To create professional attitude.
- To create social awareness among the students.
- To inculcate discipline and moral values.
- To pursue the social and democratic values.
- To make them aware of national and socio.economic problems.
- To inculcate the values of patriotism, humanism, secuJarism and communal harmony for national integration.
- Communication of vision and mission of the Institution:
 - The vision, mission and objectives of the institution are communicated to the students,teachers and other stakeholders through the college prospectus, college magazine "Yuvaspandan".
 - The goals and objectives are made known to the stakeholders through the meetings with Students, Parents, Alumni, Extension Service, Placement Cell and the Media.
 - The display of Vision Statement and Mission Statement in prominent places on the campus helps the stakeholders identify the goals and objectives of the college.
 - Activities planned and conducted by the Students Union and various subject societies and clubs alsosetve to reiterate the mission and vision of the college.

1.4 Assessment of the College

The College is recognised as a Research Centre in Physical Education Institute, below mentioned are the administrative details of the Institute.

Affiliations - The institution is affiliated to Dr. Babasaheb Ambedkar Marathwada University, Aurangabad.

Recognitions - University Grant Commission (UGC) by 2(f) 12(b)

Certification – The institute as received the following Certifications

- ISO 9001:2015
- NIRF
- AISHE

Accreditation

The following are details of the reaccreditation of the Institute.

Cycle	First	Second
CGPA		2.78
Grade	B	B++
Year	2001	2016

Table 1: NAAC Accreditation details of the Institute

The college is due to enter its Third cycle of NAAC soon.

2. Institution overview

2.1 Populace analysis for Academic year 2019-20

2.1.1 Students data

The student data (shared by the College) shows there are total of **1,659** students occupying the premises out of which Boys form the majority of **1,142** in numbers.

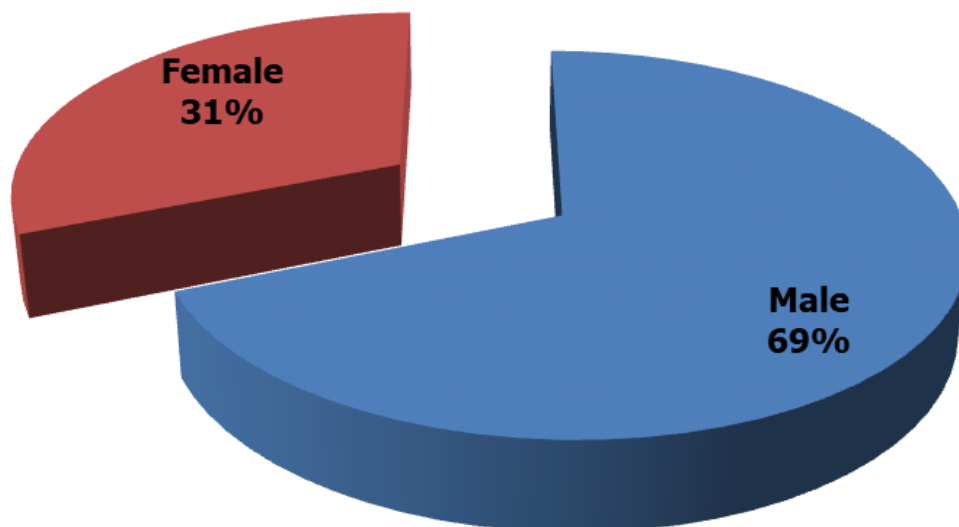


Figure 1: Summary of the students in Academic year 2019-20

The above graph shows **boys occupied 69%** as compared to **girls 31%**

2.1.2 Staff data

Type	Male	Female	Total
Teaching Staff	44	8	52
Admin Staff- office/library	9	3	12
Non-teaching & support staff/housekeeping	6	2	8
Total	59	13	72

Table 2: Staff data of the Institution for 2019-20

The staff data shows the premise has a total of **72** staff members.

2.2 Populace analysis for Academic year 2020-21

2.2.1 Students data

The student data (shared by the College) shows there are total of **1,903** students occupying the premises out of which Boys form the majority of **1,332** in numbers.

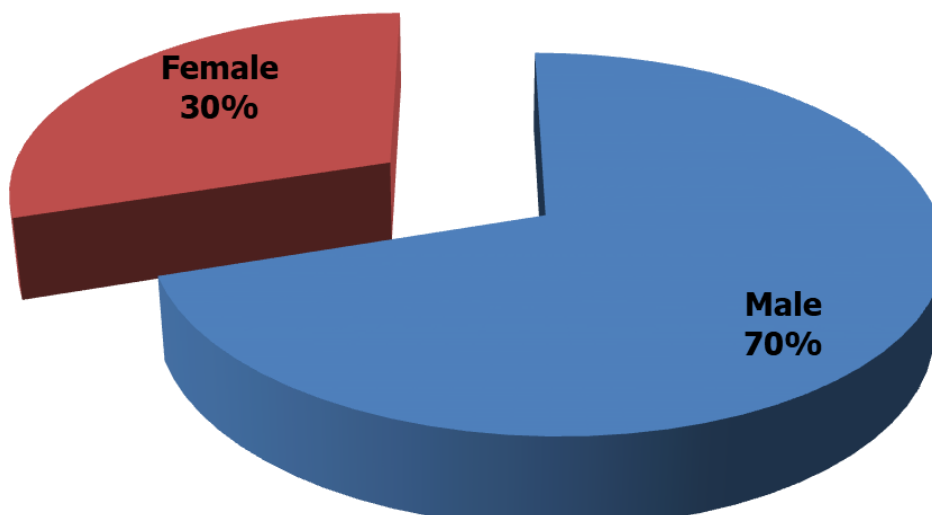


Figure 2: Summary of the students in Academic year 2020-21

The above graph shows **boys occupied 70%** as compared to **girls 30%**

2.2.2 Staff data

Type	Male	Female	Total
Teaching Staff	44	8	52
Admin Staff- office/library	9	3	12
Non-teaching & support staff/housekeeping	6	2	8
Total	59	13	72

Table 3: Staff data of the Institution for 2020-21

The staff data shows the premise has a total of **72** staff members.

2.3 Total Institute Area & College Building Spread Area

The total site area is 11.60 acres and total built-up area is 71,318 sq. ft. for approx. 1974+ footfalls.

2.4 Institute Infrastructure

2.4.1 Establishment

The College was formed in 1972. The Building is a Reinforced Cement Concrete (RCC) framework building. **Overall the Infrastructure of the Building is excellent in terms of the Architecture Design and Green Building Design. The Premise covers quite a few of the requirements for a Green Habitat.**

2.4.2 Spatial Organisation

The overall ambience of the College is warm and inviting. The classrooms and other spaces have ample natural ventilation in the form of clear glass windows with fresh air ventilation. The architecture of the building is quite well designed. The colour palette not just helps the building to stand out but also provides an Institutional arena. It balances with the local architecture with the natural landscapes of huge trees all around. The design emphasis on providing calmness to the built form and gradually merges with the serene landscape.

The floor to floor height is more than 10 feet. There is no provision for lifts in the premise, there are with CCTV, Fire extinguishers, first aid box and amenities such as courtyards, libraries, serene landscape, open areas, gardens.

2.4.2.1 Building wise details

The Building wise details on the Ashti Taluka Shikshan Prasarak Mandal' s Adv. B. D. Hambarde Mahavidyalaya, Ashti premise (Segregated into various blocks) are mentioned below:

Block Name	Building Name	Floor
A	Administrative Building	Ground Floor
	Principal Office	Ground Floor
	Administrative Office	Ground Floor
	Vice Principal Office	Ground Floor
B	Library Building	Ground Floor
	Library	Ground Floor
	Network Reasearch Centre	Ground Floor
C	Library Store Room	Ground Floor
	Life Long Learning & Extension	Ground Floor

D	Class Room	Ground Floor
	Class Room	Ground Floor
	Dept. of mathematics	Ground Floor
	Gents Toilet	Ground Floor
E	Dept. of Chemistry	Ground Floor
	Dept. of Biology	Ground Floor
	Class Rooms	Ground Floor
	F.F. Class Rooms	First Floor
F	Y.C.M.O.U.Study Centre	Ground Floor
	Ladies Common Room	
	Computer Lab	First Floor
	Class Room	
	Sanstha Office	
	Departments	Second Floor
	Departments	
	Examination Section	
G	Volley Ball Ground	Open Space
	Hand Ball Ground	
	Single Bar	
	Botanical Garden	
	Play Ground	
	Wrestling Ground	
	Kabaddi Ground	
	Volley Ball Ground	
	Kho - Kho Ground	
	Garden	
H	Flag Post	Open Space
I	Janseva College Canteen	Ground Floor
J	Womens Hostel	Ground Floor
K	Staff Room	Ground Floor
L	Proposed Administrative Building	Ground Floor
M	Water Tank	Entire Premise
N	Dept.Of Physical Education &	Ground Floor
	Gymnasium Hall	Ground Floor

O	Monument of Late Adv. B.D. Hambarde (Founder President)	Open Space
P	Parking	Open Space
	Gents Parking	Open Space
	Ladies Parking	Open Space
Q	Farm Pond	Open Space
R	Proposed Indoor Stadium	Ground Floor
S	Sport Stadium	Open Space
	400 M. Running Track	Open Space
	Jayelin Throw	Open Space
	Discthread	Open Space
	Foot Ball Ground	Open Space
T	Ladies Toilet	Ground Floor
	Gents Toilet	Ground Floor
	Ladies Toilet	Ground Floor

Table 4: Building wise detail in the premise

2.4.2.2 Room-wise details considered for Audit study

The room-wise details are mentioned below:

Sr. No.	Room No./ Room Name	Floor
1	Principal Cabin	Ground floor
2	Office	Ground floor
3	Vice Principal Office	Ground floor
4	Room No. 14	Ground floor
5	15 YCM	Ground floor
6	Staff Room 16	Ground floor
7	Math Dept. 19	Ground floor
8	Chem. Dept. 21 & 22	Ground floor
9	Zoology Dept. 23	Ground floor
10	Physics Dept. 25	Ground floor
11	Electric Dept. 25	Ground floor
12	Auto. Dept. 26	Ground floor
13	Auditorium 31	Ground floor

14	Library	Ground floor
15	Meter Hall 42	Ground floor
16	Ladies Room 44	Ground floor
17	Computer Lab 45	First floor
18	BCA Class Room 46	First floor
19	IQAC 47	First floor
20	Senior Dept. 48	Second floor
21	Senior Dept. 49	Second floor
22	BCA Class Room 50	Second floor

Table 5: Room-wise space details

2.4.2 Facilities available in the premise

The college has a good infrastructure, a grand administrative building, spacious class rooms, auditorium, Grand Library, spacious and well equipped science laboratories, Late B.D. Hambarde Stadium with 400 mtrs. running track and various play grounds, Gymkhana with indoor and outdoor sports facilities Ladies common room with toilet facility, Computer lab with 50 computers in LAN, Language Laboratory, Network resource center, virtual classroom, smart board and well-furnished departments and Wi Fi access to the staff and students.

2.4.4 Operation and Maintenance of the premises

The interview session with the staff regarding the operation and working hours is summarized in the table. The Institutions are open Monday to Saturday for full day. Sunday is an off for all. Below mentioned in the table are the average working hours. The detail wise timing for each is mentioned below the table.

S. No.	Section	Spaces	Time	Hours / day	Days in a year
1	Main Institutional College	Student areas and Teaching faculty	7:00 a.m. to 2:30 p.m. & 1 p.m. to 6 p.m.	6.5	200
2	General areas	Admin areas and library, Passage, staircase, toilet	10:00 a.m. to 5:00 p.m.	7	240

Table 6: Schedule of the timings of the premises

3. Green Building Study Audit

3.1 About the Green Building Study Audit

It is a systematic study of the aspects which make the Institution a sustainable and healthy premise for its inhabitants.

3.2 Analysis for the Green Building Study Audit

The procedure included detailed verification for the following:

Energy Audit

- Analysis of the Lights, Fans, AC, Equipment
- Renewable energy
- Scope for reducing the current energy bills if any
- Improvement in the thermal comfort of the campus

Green Audit

- Green initiatives
- Hygiene audit
- Water Audit - Analysis of the current water consumption of campus; Scope to include Rain water harvesting and Waste water treatment in campus
- Waste Audit - Current waste produced, its segregation and usage; Strategies to be adopted for waste management and awareness

Environmental Audit

- Analysis of the current landscape + hardscape of campus
- Analysis of the flora and fauna of campus
- Strategies adopted at present to enhance vegetation
- Measures that can be adopted for ecological improvement of campus

3.3 Strategy adopted for Green Building Study Audit

The strategies included data collection from admin department, actual inventory, investigation to check the operation and maintenance, analysis of the data collected and preparation of the Report.

3.4 Timeline of the activities for Green Building Study Audit

- 22 July 2021 – Discussion with the College
- 29 August 2021 – Physical site visit of College
- 9 September 2021 – Survey of the Student and staff submitted
- 15 September 2021 – Data submitted by College
- 10 October 2021 – Submission of draft Report
- 23 November 2021 – Submission of Main Report

Green practices

Background reference image Free photos on pixabay

4. Green Practices Audit

The increasing global warming and climate change have made us realise that apart from the enormous strategies the individual small efforts need to be taken by individuals and Educational Institutes as the younger generations are the future of the world and once they are taught about these practices only then can we assume a better future.

4.1 Green practices

We observed the following points during the Site investigation:

- There is **availability of open space in the premise in addition to the provision of the multiple varieties of flora.**
- **Car-pooling, cycling to college practice are observed by the staff and students. Vehicle free Saturday is observed every Saturday to avoid air pollution in premise.**
- There is **organic composting process carried out for decomposition of organic matter of plants and it is used as an organic fertilizer and increase ecology, this is done through Vermiculture.**
- **The ample vegetation benefit the users by providing shade.**
- The NSS Team, College authorities **jointly conduct initiatives for upgrading of the premises from environmental view.**
- **Cleanliness drive is carried out every year on 2nd October, Mahatma Gandhi Jayanti. Cleanliness is also maintained by the cleanliness committee.**

4.2 Community Development

The various community development programs conducted include Tree Plantation, Life Learning, Employability Skill program introduced for the youth, Blood Donation Camp, Food Kit Distribution Program to the neighbourhood community, Relief fund programs. **As part of the physical site visit a discussion session was held after on-site**

verifications. During this the Team was informed owing to social activities carried out by the College in local villages around 50-60% of the population have now turned to urban areas and better employment opportunities than sugarcane farming which is was the main occupation of the inhabitants of the village.

We have always heard Education brings about a difference in one's life in fact in lives of generations to come; but the example set up by Ashti Taluka Shikshan Prasarak Mandal' s Adv. B. D. Hambarde Mahavidyalaya, Ashti shows that small and consistent steps taken to educate and spread awareness about social well being have a huge impact.

These efforts are remarkable without even thing about any financial or economic benefits the staff and students have gone out of their ways in bringing such a big change in the lives of rural populace.

They set up an example that when educated young minds do not wait for their graduation or degree to be completed but implement the knowledge they have inculcated into practice there will be rural development. As these small steps go a long way towards the well being of rural population.

4.3 Eco-friendly initiatives undertaken

The Institution has undertaken the following initiatives through **excellent efforts** towards save environment measures before pandemic. The NSS Department conducts various activities like tree plantation, nature cleanliness, visits to nearby flora and fauna, rural development initiatives.

4.3.1 Environment initiatives undertaken by the college

S. No.	Date	Activity	Participant nos.
2020-21			
1	5 June 2020	World Environment Day	45
2	2 October 2020	Cleanliness Drive	55
2019-20			
1	1 July 2019	Agriculture Day	40
2	2 October 2019	Cleanliness Drive	50

2018-19			
1	1 July 2018	Agriculture Day	55
2	2 October 2018	Cleanliness Drive	60
3	4 January 2019	Lectures on Sustainable Environment	55
4	8 February 2019	Saving of Fuel: Need of Time	50
5	23 February 2019	Birth Anniversary of Gadgebaba	65
2017-18			
1	24 October 2017	Pollution free Saturday	60
2	2 October 2017	Cleanliness Drive	65
3	13 April 2018	One Day Project at Mauje Kasewadi 'Pani Foundation	55
4	2 May 2018	'Shramdan Shibir'	50
2016-17			
1	1 July 2016	Tree Plantation Program	55
2	2 October 2016	Cleanliness Drive	60
3	11 November 2016	Tree Plantation Program on Birthday of President of ATSPM, Hon. Kishornana Hambarde	55
4	28 January 2017	Lecture program on Mahatma Gandhi, Rajarshi Shahu Maharaj & Environment Training Program	50

Table 7: Details of the environment related activities

Due to lockdown, more social events could not take place physically after these.

4.3.2 General activities Conducted by NSS unit

- Cleaning campaign in the society
- Afforestation through tree plantation
- Creating awareness of such issues as social problems, education and cleanliness
- Awareness Rallies about environment, cleanliness
- Organization of health camps

4.4 Survey Results

An online survey was conducted to analyse the student and staff views about the premise, following are some of the reviews.

4.4.1 Participation

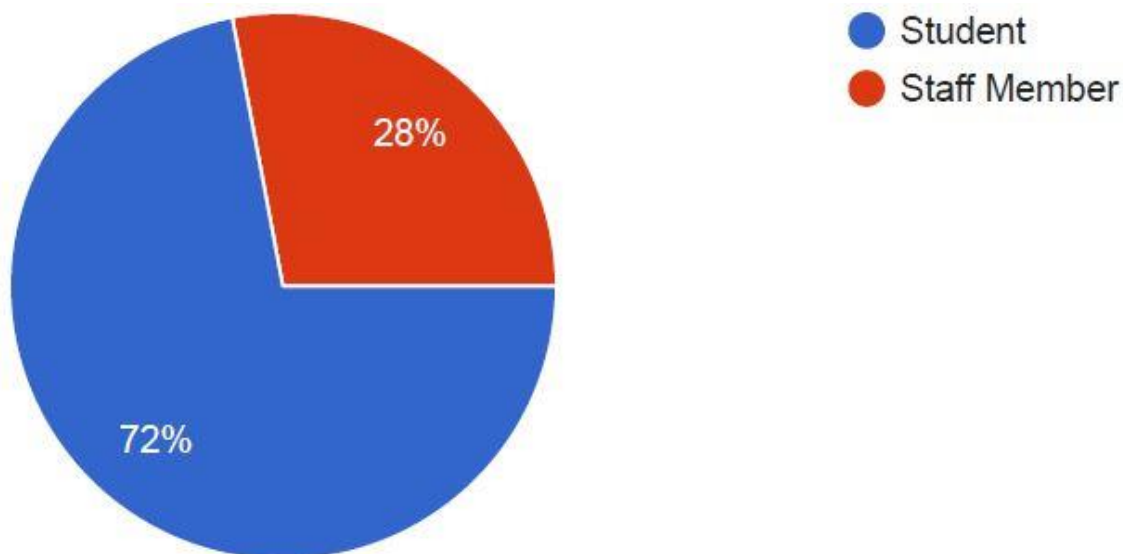


Figure 3: Participation analysis in the survey

A total of **143 responses** were received out of which 72% were students.

4.4.2 Rate the Green awareness practices in College

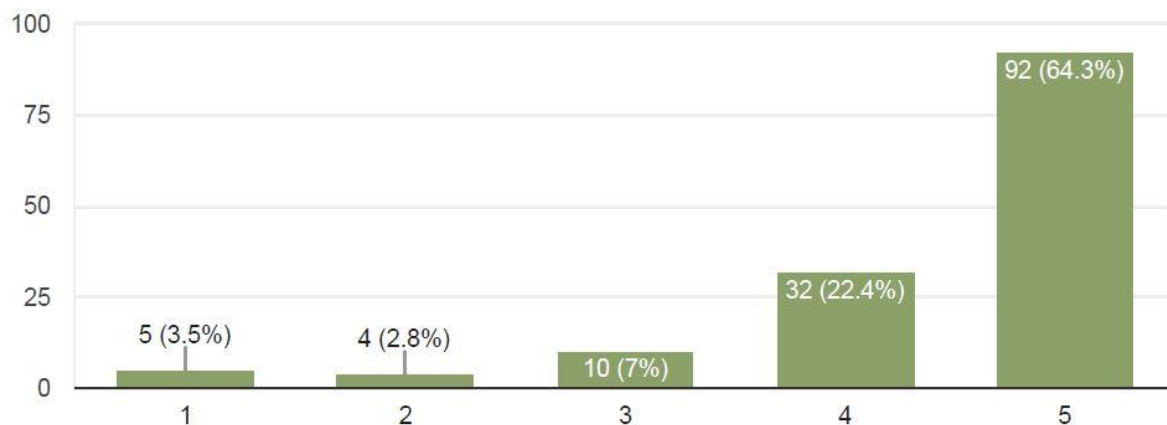


Figure 4: Green awareness practices in College

There were mixed responses received the highest was for **rating 5 (Excellent) at 64.3%** followed by **22.4% for rating 4 (Very good)**.

4.4.3 Does your College conduct environment awareness programs/ webinars/ plantations/ cleanliness or similar programs?

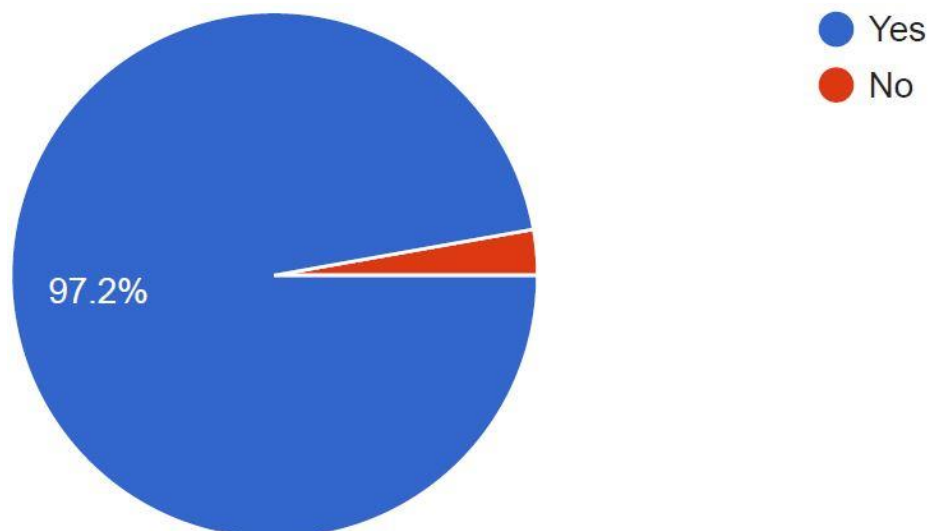


Figure 5: Green awareness practices in College

The students, staff (**almost 97%**) of responses confirmed activities are conducted which is very excellent.

4.4.4 Do you participate in such events?

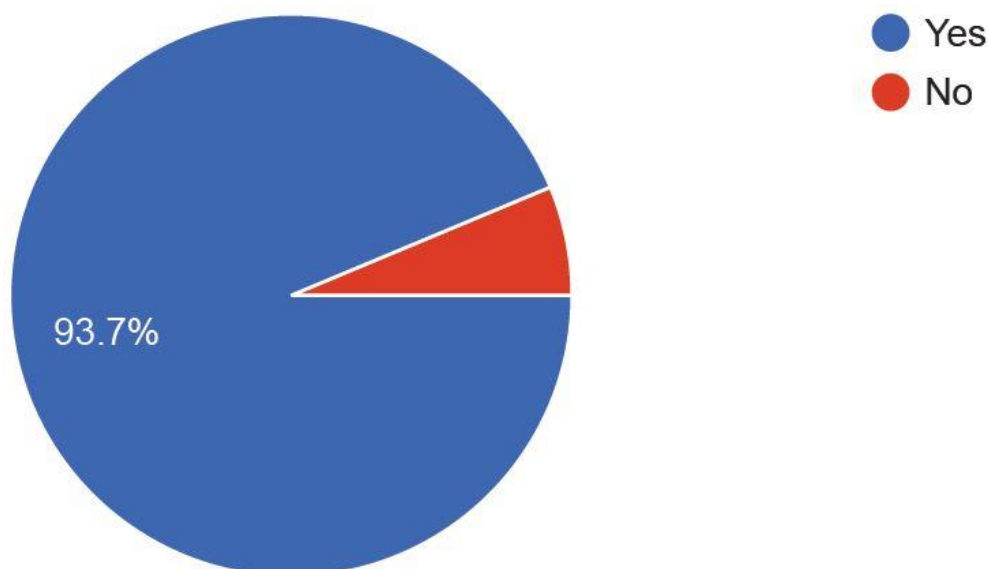


Figure 6: Green awareness practices in College

The students, staff (**almost 94%**) of the responses confirmed their participation, **this is an excellent response.**

4.4.5 If yes, what has been your experience about the program?

We have listed some of the key responses below.

- Nice
- Very good
- Feel well
- Very useful program
- It's very informative and helpful for protection our Natural resources
- Very exciting movement and very good experience
- **Provides staff and students better understanding of Green impact on campus. If self enquiry is a natural and necessary outgrowth of a quality education.**
- The college strives to give scope to the latent qualities of the student.
- There is so good arrangement from our all teachers and all staff
- Best experience
- It's good program's to improve my environment awareness.
- **Our programs work hand-in-hand with tribes to ensure we protect their health and the environment.**
- Overall it was an amazing and informative experience for me.
- Great
- It's a good college conduct environment awareness program.
- Nice to learn to maintain natural life cycle
- Excellent
- I experienced how to caring trees and nature
- Good
- It's very amazing and it gives truely satisfaction to the soul
- Yes it is good program about environment and it is necessary for all things

- Programme is very Useful
- Mind satisfaction about the social bonding work
- My experience is, bring nature into the classroom, take students outside to learn, or find impromptu teachable moments on a nature walk with our families, EE has many benefits for youth, educators, schools, and communities.
- Good
- Really good experience about this program
- Time to time arranged program is supported for college environmental protection and secure for students and staff of college.
- We conduct safe environment week, awareness program about the environment. It gives us the strength.
- It's very good experience to participated in plantation
- Excellent
- Water conservation practice by NSS
- Excellent
- **My experience was really nice, I got to learn many things from that activity, even I realises importance of environment conservation.**
- Nice experience, college conduct tree plantation, Environment awareness program.
- Very nice
- Good
- Very good program
- Actually Programme conducted in our college
- such program
- **All the students enthusiastically participate in the program organized by the college. This program is very good. This leads to better public awareness. Such events should be organized everywhere.**
- Its really good event. Participatory, Society oriented and Result oriented

4.5 Recommendations for a Sustainable Habitat by Greenvio Solutions

We have found that the current practices are very excellent and thus there are only minimal recommendation with respect to this section.

a) Plant as a gift

As a kind gesture the guests visiting the premise can be asked to plant a small plant in the premise itself and they can be even given plants/ bouquet from the flowers of the plants in the premise as a gift.

b) Environmental awareness

There can be various artworks on compound wall giving message of saving environment through the joint efforts of the students and staff thereby making the student socially and environmentally responsible citizen.

c) Tree adoption scheme

The college can adopt One Faculty – One tree adoption scheme which is one of its kind practice, this can be very beneficial especially during the summer season.

d) Signages on the plants mentioning scientific names

The practice of having the names of each plant and tree will provide awareness among the staff and students.

Waste Audit



Background reference image Polina Tankilevitch on pexels

5. Waste Audit

Waste is an inevitable part of our lives. Over the years as the awareness about waste management techniques has given a rise to rethink how the waste can be avoided from being sent to the landfills. The audit provides an approximation of the types of waste generated, location of waste collections, disposal techniques used, waste segregation methodologies adopted, waste management strategies that are and implemented in addition to the newer ways the can be adopted aiming to make the premise clean and sustainable. Here sustainable refers to a broader aspect to analyse whether the current techniques are having positive or negative effect on the stakeholders of the premises.

5.1 Waste produced

The types of waste collected in the campus are as follows. These are separated before processing and not given to the local Corporation. The details of the quantity and type of waste are as follows.

S. No.	Type of waste	Source and quantity	Current Disposal method	Can be treated/ recycled?	Methodology
1	Solid waste	Toilets–Biodegradable waste of 15 kg per week	Led in the storm water drains	Yes	TREATED - Small biogas plant can be proposed in open space
2	E-waste	Computers - Non-biodegradable waste as per the annual year usage	Given to vendor	Yes	CONTINUE - with the current practice
4	Dry waste in form of leaves	Open space & plantations, papers - Non biodegradable waste of 8-10 kg per week	Composting	Yes	CONTINUE - with the current practice
4	Liquid waste	Toilets, washbasins – Around 100 – 120 litres per week during general times and 50 litres at present	Led to the storm water drain and garden	Yes	TREATED - Waste water treatment plant a well as continue with current practice of reuse in garden

Table 8: Summary of the types of waste produced in the premises

5.1.2 Bins summary

The Dustbins in the premise with volume of 7 litres (small) and 25 litres (Medium) each. The analysis of dustbins is presented below.

Department	:11
Laboratories	:7
Office	:4
Library	:3
Outdoors	:3
Poarch	:3

5.2 Waste handling

Quantification wise as per Interview and survey it was found that the Solid, Dry leaves collected is approximately 8-10 kg per week. The liquid and hazardous waste (septic tanks) is approximately 120 litres per week. The waste produced on campus is segregated. The staffs are very well trained and do an excellent job. **During on-site physical visit and interaction with the Team we observed the concern and dedication the entire Team shows towards the College management aspect. We highly appreciate these efforts and way of working.**

5.3 Waste management (On-site investigation)

The college undertakes the following activities:

- It reuses the papers. It was informed newspapers were given in bulk to Raddi and not to Municipal Corporation **thereby not adding to landfill site.**
- **An MoU is working with Nagar Panchayat Ashti to collect solid waste regularly.** Ample measures are taken to maintain hygiene.
- **No smell problem or health related issues due to the waste are there.**
- There are adequate numbers of bins present in all parts of building.
- **The waste does not pollute the ground or surface water.** The wastes from toilets are discharged to main drains through underground covered channels (Safety Tanks) thus avoiding any incident.
- **There is no problem of air pollution from waste as informed.**
- **Vermin compost project in college helps to meet the need of organic fertilizers for trees in campus and to manage biodegradable solid waste.**

5.4 Survey Results

An online survey was conducted to analyse the student and staff views about the Waste management practices adopted in College, following is the result received.

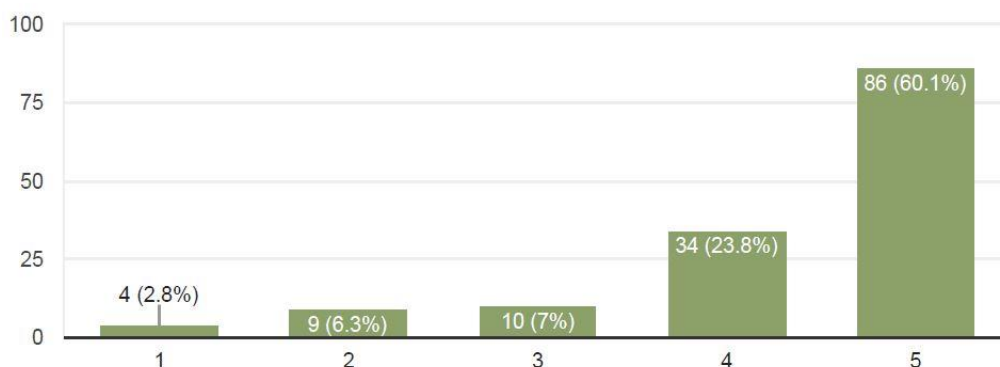


Figure 7: Waste management practices in College

There were mixed responses received the equal also the highest was for **rating 5 (Excellent) at 60.1%** followed by **23.8% for rating 4 (Very good)**.

5.5 Recommendations for a Sustainable Habitat

The following practice can be adopted for further up gradation.

a) Zero Waste

The college can undertake a zero organic waste protocol. The following practices can be adopted as part of the same. The food waste generated by the students and staffs are taken by them to their own home, so that, minimum waste is generated inside the premises.

b) Incinerators

The Incinerators should be installed in Girls toilets for disposal of sanitary napkins

c) Twin Dual Litter Dustbin Bins

There should be more number of dual litter dustbins at various locations in areas such as Canteen, open spaces. This would inculcate the awareness of waste segregation among students.

d) Signages

Message about avoiding wastage should be placed at appropriate locations.

Water Audit



Background reference image Vlad Chetan on pexels

6. Water Audit

Water is one of the basic needs. Pure drinking water is a resource which needs to be preserved efficiently. Water audit helps to identify the sources of water consumption, the water requirement by the campus met by these sources. The points and effective usage of without any wastage. Understanding the techniques which are best suited to the site to increase water conservation in terms of awareness and practice.

6.1 Water availability and consumption

6.1.1 Sources of Primary water supply

The main source of water is through Bore well and Farm pond. The College does not require water from the Local Municipality. The total water consumption through the tanks on site, these are available in a quantity of 5 tanks at multiple location. The capacity of each is as follows:

S. No.	Type	Nos.	Capacity in litres
1	Water tank cement	2	15,000
			10,000
2	Water tank syntax	3	1,000
			500
			500
Total		5	27000

Table 9: Tanks and well in the premise

6.1.2 Sources of Secondary water supply

- a) **Bore wells** – There is 1 Bore wells available on the site as underground water facility with daily water being pumped for using submersible pumps. The actual depth of the well is 300 ft. for all. On a daily basis nearly 3,000 to 6,000 litres of water is pumped from well for usage depending on the need.
- b) **Natural Rainwater harvesting** – It is done through the ground water recharging and upgrading the water quantity for bore well recharging. Though, no particular system is adopted for harvesting but the water gets recharged and water table is maintained well

naturally. The areas of gardens, tracks do not hav any kind of flooding and water is percolated on its own. Though, there can be provision of water tanks to store the water in future. At present the requirements are met within the limits.

- c) **Farm Pond – Around of 40,00,000 litre capacity is constructed in the campus to meet the need of plants, trees and daily usage. It has been very beneficial and reduced the dependency on Municipal water supply.**

6.2 Water requirement

The main areas of water requirement and type of usage is as follows

- **Drinking water** – Consumption of around 500 litres of water through Aquaguard like system available in the premise, the taps and water cooler.
- **Toilet blocks**– General usage by occupants in toilets, urinals, bathrooms, wash basins using approx. 250 litres of water daily
- **Cleaning of the premises** – The entire Institution is very well maintained with respect to hygiene and cleaning is one of the major uses of water requirement. **The toilet areas are cleaned twice on a daily basis.**
- **Garden and surrounding open space** – Cleaning, watering the plants requires approximately more than good amount of water, keeping in mind the scale of the open spaces there is supply system connected directly and the plants, trees are hardly watered regularly. Though, they are watered on alternate days in winter season and about 2-3 times a day in summer season on a regular climate day it is watered 3 days a week and in rainy season it is dependent on the monsoon showers.

6.3 Areas of water usage

Based on the inventory done and data shared by the staff it was found that the premise has the following facilities:

- Urinals – 25 Nos.

- Girls toilet – 3 Nos.
- Boys toilet – 4 Nos.
- Wash basins – 20 Nos.
- Water coolers – 2 Nos.

As per the data shared by the College and on site observation, it was noted that there is no water wastage of water in the form of Cleanliness of toilets.

6.4 Site investigation about water management.

The college has an excellent management system which is very appreciable. We have observed the following points.

- There was **no water leakage in the entire premise**; the pipes are well maintained with adequate hygiene.
- **The premise has an efficient water management in terms of operations and maintenance.** The toilets were kept very tidy and are cleaned every day.
- The **waste water does not mix with ground water and gets directed to storm water drains.** The college has natural rainwater harvesting system which is very useful.
- There is sufficient number of taps in the premise. **Special precautions are taken to check if the taps are closed properly.**

6.5 Survey Results

An online survey was conducted to analyse the student and staff views about the Water management practices adopted in College, following is the result received.

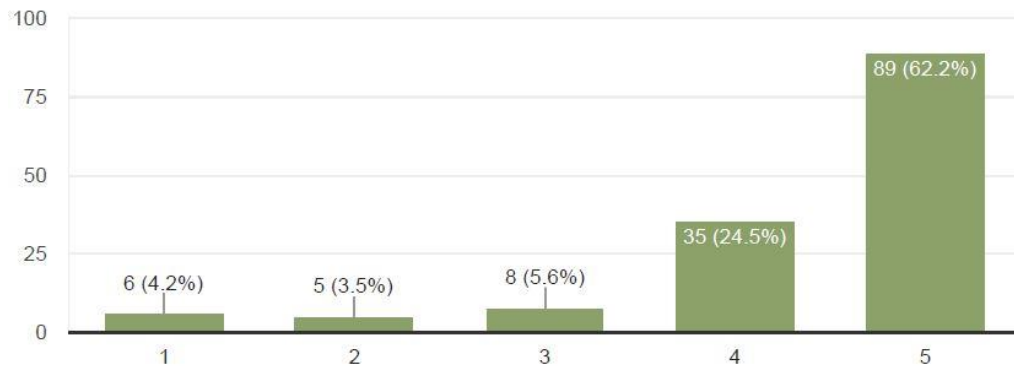


Figure 8: Water management practices in College

There were mixed responses received the highest was for **rating 5 (Excellent) at 62.2%** followed by **24.5% for rating 4 (Very good)**.

6.6 Recommendations for a Sustainable Habitat

Below mentioned are few suggestions for better water management practices in the premise.

a) Universal Toilet

At least 1 toilet should be made for specially abled as per universal design norms.

b) Toilet flush system

Replace the existing single flush cisterns with dual flush, if possible to include waterless urinals or e-toilets.

c) Signages

Message about avoiding water wastage should be placed at appropriate locations.

d) Waterless urinals

There can be provision of waterless urinals as a Green Building initiative in the premise, either the existing ones can be replace with such a facility of new toilets can be constructed in this manner.



Health & Hygiene Audit



Background reference image Curology on unsplash

7. Health and Hygiene Audit

The hygiene is a part and parcel of our daily life. It is extremely essential to keep the surroundings clean in the same manner as we would want our houses to be. Educational Institutes have a bigger role to play in order to affect the young minds in the positive manner through better hygienic practices.

7.1 Facilities available

The Institution has the following facilities as part of the premise.

- Washroom facility in each of the Building.
- Hand wash facility
- Drinking water facility in the form of Water coolers and taps
- Ample number of dustbins in the premise

7.2 Smoke Exposure

As per the Site visit the following analysis **has a positive impact on premises.**

- The college has No Smoking on its compound wall as part of the awareness.
- Canteen uses Gas cylinders for cooking, there is no utilisation of fire wood. Thus **there is no smoke from burning of fire wood and any health issues related to the same.**
- The **garbage in premise is not burnt** and there is not air pollution because of it.
- The Institution is a tobacco and smoke free campus which helps in adapting to a Healthy Institution
- There is parking provision inside the campus there is slight issue of dust owing to the same but it is **balanced with the good vegetation in the premise.**

7.3 Hygiene

As per the Site visit the following analysis **has a positive impact on premises.**

- For overall hygiene of the students and staff there are facilities such as

Washroom facility on ground floor, hand wash. The hygiene of toilet areas is well maintained. **The entire campus is cleaned twice on a daily basis. It is very appreciating that there are only few Maintenance staff who strive their best to take care of the entire premise in the most excellent way possible.**

- There staff keep a regular check about the operation and maintenance of the equipments each floor.
- Water management initiative with appropriate hygiene is undertaken. The areas of water tanks in site on ground floor are clean and no mosquito breeding spots are there.
- There are pest controls program practiced with appropriate sanitation facilities and Annual Maintenance Contract for pest control is done once a year by professional Pest control units
- The food premises and equipments are cleaned as per schedule with special care taken to avoid any water stagnation. The food waste and other refuse are removed periodically from food handling areas to avoid accumulation.
- As part of Tree Plantation programme the initiative of **Swachh Bharat Abhiyan of Govt. of India** is undertaken during various occasions.
- There are appropriate storage areas which are well maintained.

7.4 On-site investigation

During the physical verification of the site, the following points were noted.

- All the facilities are cleaned on a daily basis.
- The Maintenance staffs are allotted the responsibility of the washroom hygiene and they do a very commendable and excellent job to maintain hygiene of the premise.

7.5 Recommendations for a sustainable habitat

As per out physical site verification for this audit the efforts of the College are highly appreciable as they are very well maintained. As an up gradation some additional signages pertaining to cleanliness can be included in the premise.

8. Towards a Healthy & Sustainable Institution

8.1 Inputs by Greenvio Solutions

Based on the analysis of the study of premises in addition to the recommendations provided in each section of Ecological, Water, Waste and Energy Audit the College can adopt the following strategies towards a Healthy and Sustainable Institution practices.

- a) Kitchen garden** - There can be provision of kitchen garden practices in a designated area of the open space this would enhance the biodiversity and be useful in training students and staff about the healthy practices and vegetables grown which would be used in Canteen. It helps in capacity building. The smaller steps taken have huge impacts when each student would adopt these practices in their homes or societies and grow kitchen garden, terrace garden there will be a long term benefit for the environment as a whole..
- b) Cutlery in the Canteen** – The regular plastic and steel plates, spoons used in Canteen can be replaced with eco-friendly and organic leaves, paper straw, disposable plates, edible spoons and tables made out of sugarcane waste or bamboo. This will be first of its kind initiative to be adopted and practiced thus also inculcating the healthy practices in students.
- c) Waste vio** – College can tie up with an organisation and students can be encouraged to collect dry waste and electronic waste such as newspapers, old computers and others and hand over to organisation on a weekly or monthly basis thereby making a waste reduction approach in the community.
- d) Signages** – In addition to the signages being in regular language there can be additional signages in braille language for the specially abled students.
- e) Additional fire safety** - The premises at present has only Fire extinguisher as the safety practice but additional fire safety measures should be adopted such as Hose reel, signages, fire-fighting tank, fire alarm and sprinkler system. There should be fire extinguisher minimum two per floor.

8.2 Survey Results

An online survey was conducted to analyse the student and staff views about what changes according to you can be undertaken for Green audit improvement in College premise and activity, some of the key responses are listed below. Whereas many responses **stated there were no changes requires because the present practices are excellent.**

Some of the positive responses are listed as follows:

- No changes given because college already give very good maintenance programs
- No changes all is well
- Plants management are very good in college
- Already great changes have been implemented towards the same.

Some of the suggestions by the Students and staff are listed below:

- Organize guest lecture of doctorate in that field or give activity on that basis
- Write slogans on walls for green college
- 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 be used to determine the type and volume of waste, which can be used for a recycling project or to improve waste minimization plan.
- Identify tree and shrub name plates.
- To cultivate more fruit trees in the premises for Institutions growth.
- Planting medicinal plants and Installing solar plates to generate electricity.
- Tree plantation record and maintenance of Greenery. Planting of various types of flowers
- Solar system, waste recycling and more trees

However, it should be noted that the College has taken up multiple initiatives and because of Pandemic the students have not practically visited the campus so many of these points are not mandatory at the moment.

9. References

1. Uniform Plumbing Code – India, 2008
2. IGBC Green Existing Buildings – Operation & Maintenance (O&M) Rating system, Pilot version, Abridged Reference Guide, April 2013
3. IGBC Green Landscape Rating system, March 2013
4. BOMA Canada Waste Auditing Guide, Best Environmental Standards, BOMA BEST - Canada
5. Used only for understanding Universal design - Universal accessibility Guidelines for Pedestrian, Non-motorized vehicle and Public Transport Infrastructure – Report guidelines by Samarthyam (National centre for Accessible Environments) – an initiative supported by Shakti Sustainable Energy Foundation.





Ashti Taluka ShikshanPrasarak Mandal's

Adv. B. D. Hambarde Mahavidyalaya Ashti

The Green Campus, Energy and Environment Policy

The college has a good infrastructure, a grand administrative building, spacious class rooms, auditorium, Grand Library, spacious and well equipped science laboratories, Late B.D. Hambarde Stadium with 400 mtrs. running track and various play grounds, Gymkhana with indoor and outdoor sports facilities Ladies common room with toilet facility, Computer lab with 50 computers in LAN, Language Laboratory, Network resource center, virtual classroom, smart board and well-furnished departments and Wi Fi access to the staff and students.

Natural physical features

The premise includes a rich biodiversity and huge number of plants in the adjacent open space. The site does not have major different in the land levels (contours). There is slight difference in land level in open spaces. This has proved to be beneficial to college as the rainwater is diverted through pipes into ground and it has helped ground water recharge for the well water over the years as informed by the College. There is provision of pond which helps in rainwater harvesting and has been beneficial for the college over the years.

Manmade features – The premise is situated in an urban area amidst residential areas and open spaces with appropriate proximity to necessary amenities. There is sufficient appreciation space for entrance. The materials used for construction are RCC and the landscaping includes innumerable natural trees as well as potted plants. There are facilities for ramps, cement benches made from waste, recycled roof used as a covering shed for parking, Sanitary napkin vending machine, Day care for girl students and lady staff members having kids, Auditorium with updated sound system to organize various functions, seminars and conferences.

- **Circulation** – There is a smooth transition of pedestrian traffic inside the premises due to the large entrance gate and the huge open space where vehicles of students and staff are parked.
- **Climate** –The annual rainfall for the district is 750.1mm and overall climate is dry except for South-west monsoon.

Scope of the Policy:

The Green Campus, Energy and Environment Policies will develop exciting new co-curricular and extracurricular practices that encourage students to take the lead in creating positive change. These initiatives call for a thorough review of all infrastructural, administrative functions from the standpoint of energy efficiency, sustainability and the environment.

The focus areas of this policy are:

- Clean Campus Initiatives
- Landscaping Initiatives
- Clean Air Initiatives
- Smoking Free Campus
- Installation of Energy Efficiency Equipment
- Water Conservation through Rainwater Harvesting System
- Solid Waste Management
- Liquid Waste Management
- E-Waste Management
- Awareness Initiatives
- Environment-centric Student Societies and Department Activities
- Green Audit
- Energy Audit
- Environment Audit
- Plastic-Free Campus

Objectives of the Policy:

- To protect and conserve ecological systems and resources within the campus.

- To ensure judicious use of environmental resources to meet the needs and aspirations of the present and future generations.
- To integrate environmental concerns in to policies, plans and programmes for Social development and outreach activities.
- To work with all stakeholders and the local community awareness and seek the adoption of environmental good practice and there duction of any adverse effects on the environment.
- To continuously improve our contribution climate protection and adaptation to climate change and to the conservation of global resources.
- 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 make the campus plastic free. Conduct environmental and energy audits from time to time.
- To minimize the use of papering administration through having policy or E-governance.

Policy:

Clean Campus Initiatives

College had pledged to actively coordinate cleanliness activities in the college and beyond the campus in accordance with the vision of Swachh Bharat Abhiyan. It commits to continue with this Programme.

The broad vision is as follows:

- Generating mass awareness on cleanliness and hygiene among students and staff members by holding regular cleanliness drives.
- The idea is to motivate them to contribute in a proactive manner.
- Activities under 'Swachh Bharat Abhiyan 'will be akey component to fall the community work being done by NSS.
- Staff Members will be encouraged to participate in the cleanliness drive in the college campus.
- Events such as poster and slogan competitions, essay writing, spoken word poetry, speeches, skit son 'Swachh Bharat 'will be organized.

- Rallies on the misconnected with 'Swachh Bharat Abhiyan 'in and around the college campus will be conducted to create mass awareness.
- Remove all kinds of waste material like broken furniture, unusable equipment etc.
- Administer of the pledge by students and staff members to maintain cleanliness of the college campus and it surrounding areas on an annual basis.
- Conduct workshops on the Environments
- Commit to manage waste and maintain clean campuses especially during college events.

Lands capping Initiatives:

The campus landscape, like its buildings, can be seen as the physical embodiment of a college' values. It is a vital part of the life of a campus, providing space for study, play, outdoor events, relaxation and a esthetic appreciation. Green campus land scopes also manage run off, help recharge groundwater, and clean and cool the air on campus. The lands cape serves as visual representation of the campus community's commitment to sustainability. As campus lands capes are so visible and accessible, land scraping initiatives are a great way to build awareness round the environment.

There are more than 300 trees cover. The lands cape of trees and plants provide the 1600 students and staff with clean and cool air and is a soothing environment. The diverse green cover of college is also home to a number of animals and rare birds across at least 24 species, creating a campus rich in biodiversity. The college commits to enriching this healthy habitat and maintaining the symbiotic relation of the in situation within at urea by

- Organizing annual tree plantation drives
- Encouraging student societies to hold tree planting events

Energy conservation:

The university will do maximum efforts to reduce energy consumption and use renewable sources of energy as far as possible.

Action Plan:

- The points of energy wastage and leakage should be identified and appropriate steps shall be taken to set a target of attaining significant energy saving by appropriate modifications and adopting best practices.
- The fluorescent lights may be replaced with LED in the existing buildings and street lights across the campus.

Water Management Plan for Optimum Usage of Water:

The university shall adopt a sustainable water management plan to prevent wastage of water as well as recycle and reuse wastewater in the campus.

Action Plan:

- 1) Reduction of potable water usage by efficient monitoring, using efficient fixtures and restricting usage for irrigation.
- 2) Installation of rainwater harvesting units at suitable locations in campus.
- 3) Use of Sustainable horticultural practices

Policy Monitoring and Review:

The Committee shall monitor and review the efficacy of the policy on annual basis. Discreet or micro data could be made accessible to faculty and departmental heads for taking appropriate actions and complying with them on regular basis.

References:

1. J.C. BOSE UNIVERSITY OF SCIENCE AND TECHNOLOGY, YMCA, FARIDABAD
2. JEUS & MARY College New Delhi




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