

GREEN AUDIT REPORT 2022-2023

Submitted by
**Vivekanand Environment Awareness Brigade
(VEAB)**

Submitted to
Arts And Commerce College PondaGhat

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Vivekanand Environment Awareness Brigade



(An initiative of Swami Vivekanand Smruti Sangh Keri)

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Green Audit Arts And Commerce College PondaGhat 2022-2023

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President, VEAB, Goa

GREEN AUDIT REPORT 2022-2023

As stewards of our planet, it is imperative that institutions of education take proactive steps to ensure environmental sustainability and cultivate a culture of environmental stewardship among their students, faculty, and staff. Phondaghat Education Society's Arts and Commerce College, nestled amidst the serene landscapes of Maharashtra, recognizes the importance of this responsibility and is committed to integrating sustainable practices into its operations.

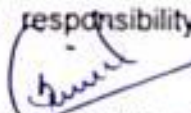
The Vivekanand Environment Awareness Brigade (VEAB), an esteemed environmental organization based in Keri Sattari Goa has been engaged to conduct a green audit of Phondaghat Education Society's Arts and Commerce College through desktop review of findings of internal green & environmental audits conducted by College, review of documents/ records and virtual tour of the College and Google form questionnaire interviews of faculty, non-teaching staff and students. Prior to the audit, questionnaires and checklists were prepared. Virtual tour of the campus included College building and infrastructure facilities such as solar PV system, Rainwater Harvesting System (RWH), gardens etc. Green Audit Report addresses green initiatives taken/ under implementation by management, the outreach of the College, suggestions & recommendations to improve overall environmental sustainability of the campus.

Through this audit, we endure to:

- Evaluate the college's current environmental practices and identify areas for improvement.
- Provide recommendations for implementing sustainable initiatives that align with the college's mission and values.
- Foster a culture of environmental awareness and responsibility within the college community.
- Strengthen the college's commitment to environmental stewardship and sustainability leadership in the region.

By embarking on this green audit journey, Phondaghat Education Society's Arts and Commerce College reaffirms its dedication to creating a greener, more sustainable future for generations to come. Together, let us embrace the challenge of sustainability and work collaboratively towards building a healthier planet for all.

The college is relentlessly striving in pursuance of academic excellence and encouraging learners to participate spontaneously in various co-curricular and extracurricular activities. It has well qualified and research-oriented teaching staff as well as supportive and efficient non-teaching staff which constantly endeavor for the betterment of the students and ultimately of the institution. Besides academic education, the college finds its responsibility towards community, women's


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empowerment, socio-economically backward class, environment consciousness, national harmony etc. and constantly addresses them through several co-curricular and extracurricular activities. We are persistently trying to kindle young minds with sublime ideas, accountability, virtuousness, curiosity, and social as well as ethical values.



Fig.1 Aerial View of Arts And Commerce College PondaGhat from Google Maps

About College:

Phondaghat Education Society's Arts and Commerce College is nestled in the tranquil surroundings of Vidyanagari, situated along Ghonsari Road in the picturesque locale of Phondaghat, within the Kankavli Taluka of Sindhudurg district. Enveloped by the serene beauty of the Western Ghats, or Sahyadri range, the college enjoys close proximity to the renowned Dajipur Wildlife Sanctuary. Occupying a sprawling expanse of 4.5 acres, the college campus boasts a well-designed infrastructure, encompassing a total built-up area of 1536.04 square meters spread across two floors and two blocks. The college building accommodates classrooms, a library, and an auditorium, providing conducive spaces for academic pursuits and cultural activities. Additionally, the college sports ground offers playing facilities, catering to the holistic development and recreational needs of its students.

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The area details of the College building is presented in following Table.

Sr.No	Designation	Area of the room (carpet) sq.mt.	The Purpose for which it is used proposed to be used
1.	Administration Office G	20.92	Admin. works
2.	Staff room G-2	23.68	For Teachers
3.	Principal Cabin G-3	20.92	For Principal
4.	Computer room	08.01	For computer teaching
5.	Class room-1	43.98	Lectures
6.	Class room- 2	43.98	Lectures
7.	Class room- 3- G1	43.98	Lectures
8.	Class room- 4- G1	43.98	Lectures
9.	Class room- 5- G1	43.98	Lectures
10.	Class room- 6- G1	43.98	Lectures
11.	Class room- 7- G1	43.98	Lectures
12.	Class room- 8- Building 2	23.68	Lectures
13.	Class room- 9- Building 2	23.68	Lectures
14.	Class room- 10- Building 2	23.68	Lectures
15.	Class room- 11- Building 2	23.68	Lectures
16.	Library	41.06	Reference purpose
17.	Seminar Hall	90.10	Guest Lectures, College events, etc
18.	Toilet Gents		For Boys
19.	Toilet Ladies		For Girls
20.	Store Room	43.98	Storage purpose
21.	Balcony		Access to classes
22.	Ramp	1.90 sq.mt.	For physically challenged person
23.	Parking Shed		For Parking


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Fig 2: Classroom



Fig 3: Classroom



Fig 4: Balcony



Fig 5: Library



Fig 6: Principal Cabin



Fig 7: Staff room

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2. Green Audit Findings and Analysis

During the green audit of Phondaghat Education Society's Arts and Commerce College, various key areas were assessed to evaluate the institution's environmental practices and suggest improvements. The audit covered the following major areas and their respective subsections, along with compliance verification, initiatives assessment, and recommendations for enhancement.

2.1 Good Daylight Design and Ventilation

- a) The infrastructure of classrooms, offices, and the library showcases favorable characteristics for good daylight design and ventilation, including high ceilings, wide doors, and large windows.
- b) The building layout maximizes natural light exposure, with corridors and classrooms receiving ample sunlight. Curtains are provided in classrooms to mitigate glare, and natural light levels range between 70-85 lux.
- c) Ventilation is facilitated by windows and fans, with some classrooms benefiting from cross ventilation due to large windows on both sides.

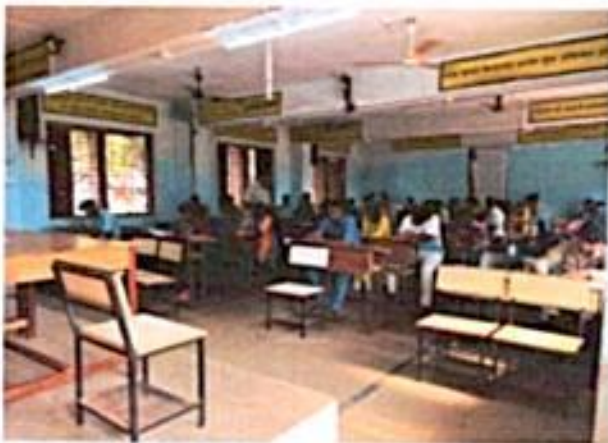


Fig 8: Good Daylight Design and Ventilation in classroom

2.2 Water Efficiency and Wastewater Management

- a) The college primarily relies on a borewell and PWD water tap as major water sources, with a 2000-liter capacity storage tank utilized for drinking and gardening purposes. The borewell yields water with a safe pH level of 7.5, ensuring suitability for consumption and domestic use.



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Fig 9: Borewell

● Recommendation:

- Given the region's ample rainfall, the college is advised to implement low-cost rainwater harvesting and drift irrigation projects to enhance water conservation efforts. Furthermore, expanding water storage capacity to accommodate sanitation needs, based on staff and student numbers, is recommended.

2.3 Indoor Air Quality

The college's location amidst the Western Ghats, coupled with minimal industrial activity and vehicle emissions in the vicinity, ensures excellent indoor air quality. Adequate tree cover contributes to a healthy and comfortable environment for building occupants.

● 2.4 Energy Efficiency

Electricity consumption, supplied by the Maharashtra State Electricity Board Pvt. Ltd., averages between 230 to 330 units per month. The college demonstrates a commendable effort in minimizing electricity usage, leveraging natural lighting and ventilation through well-designed classrooms and broader windows.

Given Maharashtra's electricity scarcity, many regions, including college premises, endure frequent power outages, or load shedding, resulting in restricted electricity supply during the day. While the state government has urged stakeholders to conserve electricity, adherence to this plea varies. Notably, Phondaghat Education Society's Arts and Commerce College is steadfast in its commitment to minimizing power consumption. With spacious classrooms, laboratories, staff rooms, and a multi-purpose hall adorned with expansive

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windows, ample natural light floods the premises during daylight hours. This design not only illuminates the spaces but also facilitates ventilation, consequently reducing reliance on electric fans.

Recommendation:

- To further reduce reliance on conventional electricity sources, the college is encouraged to explore solar power adoption by installing solar-powered appliances, such as bulbs and heaters, contributing to sustainable energy practices.

2.5 Solid Waste Management

Educational institutions play a pivotal role in promoting sustainability within our society, with waste management being a key challenge in achieving sustainability goals. Proper waste segregation serves as the initial step in effective waste management practices. At Phondaghat Education Society's Arts and Commerce College, solid waste predominantly consists of dry waste. Waste bins are strategically placed in classrooms, staff rooms, the library, washrooms, and across the campus for convenient disposal. The collected waste is regularly picked up by the local Panchayat. However, there is a concerning practice of burning paper waste within the campus premises. As the college concludes its activities by 11:00 in the morning and does not operate a canteen, wet waste generation is minimal.



Fig 10: Dry Dustbin Provided by Gram Panchayat



Fig 11: Single use plastic collection center

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Recommendation:

- To address the issue of paper waste burning, the college should cease this practice and instead encourage alternative disposal methods. Additionally, to reduce paper usage and wastage, the college should explore and promote the adoption of e-services and digital documentation systems wherever feasible. This shift towards electronic mediums will not only minimize paper consumption but also align with the college's commitment to environmental sustainability.

2.6 Transportation

Situated in an advantageous location, the College enjoys convenient access to public transportation options, significantly minimizing reliance on individual vehicles. The majority of both staff and students opt for state-owned public transport buses for their commute, demonstrating a conscious effort to reduce carbon emissions. Private car usage is notably negligible. Additionally, some members of the college community utilize bicycles for their daily commute, further contributing to pollution reduction efforts.

2.7 Awareness Initiatives:

With the environment and sustainability receiving inadequate attention, the world grapples with pressing issues like ozone depletion, climate change, water scarcity, and unsustainable resource management. In response to these challenges, the College is proactive in raising awareness and fostering environmental consciousness among its community. Each year, the college organizes a series of guest lectures focusing on diverse environmental topics, including sustainable practices, eco-friendly products, and biodiversity conservation. Furthermore, the college hosts various activities such as field trips to ecological and historical sites, commemoration of World River Day, regular cleanliness drives, and campaigns to raise awareness about the hazards of single-use plastics. Notably, the college has undertaken tangible initiatives, including the construction of a small check dam along a local stream, demonstrating its commitment to environmental conservation. Lecture series dedicated to biodiversity conservation further enrich the educational experience, ensuring that students are well-equipped to contribute positively to environmental sustainability efforts.



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Fig 12: Construction of a small check dam



Fig 13: Construction of a small check dam



Fig 14: Cleanliness drive



Fig 15: Newspaper cutting of awareness about the hazards of single-use plastics



Fig 16: 1000 Vruksha Lagwad



Fig 17: Cleanliness drive

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Comprehensive Suggestions:

1. Develop Campus Gardens:

- Establish green spaces and gardens on campus to promote biodiversity, provide habitat for local wildlife, and create outdoor learning environments for students.
- Incorporate native plant species to support local ecosystems and reduce water consumption.
- Encourage student involvement in garden maintenance and cultivation as part of experiential learning opportunities.

2. Emphasize Outdoor Teaching:

- Integrate outdoor classrooms and learning spaces into the curriculum to connect students with nature and foster environmental appreciation.
- Utilize the college's natural surroundings, such as gardens, green spaces, and nearby trails, for hands-on learning experiences across various subjects.
- Organize field trips and nature walks to explore local ecosystems, conduct scientific observations, and engage in environmental studies.

3. Expand E-Services and Digitalization:

- Increase the use of electronic services and digital platforms for administrative tasks, communication, and documentation to reduce paper usage and environmental footprint.
- Implement online learning platforms and virtual classrooms to enhance accessibility, flexibility, and sustainability in education delivery.
- Encourage the adoption of e-books, digital libraries, and online resources to minimize the need for printed materials and promote resource efficiency.

4. Establish Eco Clubs and Students Organizations:

- Form eco clubs or environmental student organizations to empower students to take active roles in promoting sustainability and initiating green initiatives on campus.
- Facilitate eco club activities, such as tree planting events, recycling drives, waste audits, and environmental awareness campaigns, to foster environmental leadership and engagement.
- Provide opportunities for collaboration with local environmental groups, NGOs, and community partners to amplify impact and address broader environmental challenges.



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5. Support Community Based Conservation Initiatives:

- Engage with local communities and stakeholders to identify environmental issues and develop collaborative conservation initiatives that benefit both the college and surrounding areas.
- Establish partnerships with community organizations, government agencies, and indigenous groups to implement conservation projects, such as habitat restoration, watershed protection, and wildlife conservation.
- Organise community outreach events, workshops, and educational programs to raise awareness about environmental issues and promote sustainable practices within the broader community.

6. Transition to LED lighting




- Replace traditional incandescent and fluorescent lighting fixtures with energy-efficient LED bulbs to reduce energy consumption, lower utility costs, and minimize carbon emissions
- Conduct an energy audit to identify areas for LED retrofitting and prioritize lighting upgrades based on energy savings potential and return on investment.

Table: Improvement in Existing infrastructure

Picture	Suggestions
	It is imperative to improve ventilation or provide emergency electricity provisions to prevent disruptions during teaching, particularly during the monsoon season when electrical fluctuations occur.



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	<p>The provision of drinking water sources must be augmented considering the number of students and staff in the college to mitigate inconvenience. Additionally, more water filters need to be installed.</p>
	<p>Immediate action is required to install proper partitions in the girls' latrine to ensure hygiene and privacy.</p>
	<p>Immediate action is required to organize and maintain the storeroom, as the current arrangement appears disorderly. It must be promptly segregated and kept clean at all times.</p>





It is strongly advised to remove materials stored in the veranda/corridor and ensure the area is kept clean at all times. It is unbecoming of any institution to maintain a dirty corridor.



The fire extinguishers must be refilled and readily available at all times for emergency use.

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Table: List of Birds seen during the Green Audit Visit

Sr No	Name
1	White-throated Kingfisher
2	Asian Green Bee-eater
3	White-browed Fantail
4	Rufous Treepie
5	House crow
6	Common Iora
7	Brahminy Kite
8	Cattle Egret
9	Spotted Dove
10	Southern Coucal
11	Coppersmith Barbet
12	Black Drongo
13	Black-hooded oriole
14	Red-whiskered Bulbul
15	Red-vented bulbul
16	Thick-billed flowerpecker
17	Purple Sunbird

*Fig 18: White-browed Fantail**Fig 19: Asian Green Bee-eater*

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Fig 20: White-throated Kingfisher



Fig 21: Red-whiskered Bulbul

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Table: List of Trees seen during the Green Audit Visit

Sr No	Name
1	Emblica officinalis - Amla
2	Terminalia chebula - Hoddo
3	Mangifera indica - Mango
4	Careya Arborea - kumyo
5	Tamarindus Indica - chinch (tamrind)
6	Cocos nucifera - coconut
7	Syzygium cumini - Jambhul
8	Colotropis gigantea - Rui
9	Artocarpus heterophyllus - Jackfruit
10	Bombax ceiba - Silk cotton tree
11	Manilkara zapota - Sapodilla (chiku)
12	Acacia auriculiformis
13	Casuarina - She-oak
14	Eucalyptus -Nilgiri



Fig 22: Mangifera indica - Mango



Fig 23: Mangifera indica - Mango

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