# Maratha Vidya Prasarak Samaj's Arts, Science, and Commerce College, Ozar (Mig) Tal. Niphad

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# 7.2.1: Best Practices

## **Best Practice No # 01**

## Title of the Practice- "Green Campus"

#### **Objectives of the Practice:**

The primary objective of the "Green Campus" initiative is to adopt and create a sustainable and ecofriendly environment within the college campus. This practice aims to reduce the college's carbon footprint by adopting ecofriendly and environmentally practices, promoting green infrastructure, and encouraging a culture of environmental consciousness among students, faculty and staff, through this practice, the college seeks to:

- 1. Reduce energy and resource consumption by adopting renewable energy sources and optimizing waste management.
- 2. Enhance the aesthetic and ecological value of the campus by increasing greenery, conserving biodiversity, and promoting water conservation.
- 3. Inculcate a sense of environmental responsibility among all students by adding sustainability into the academic curriculum and organizing awareness programs and eco-friendly activities.
- 4. Collaboration with local communities and environmental organizations to achieve long-term environmental goals.

#### **Emphasis:**

- 1. Promoting Plantation for a Cleaner Environment: Enhancing greenery on campus helps improve air quality and acts as a carbon sink. By planting more trees and maintaining gardens, the college can create a pollution-free environment.
- 2. Maintaining a Clean Campus: Keeping the campus clean is vital for creating a healthy learning environment. Regular cleaning, proper waste disposal, and encouraging students and staff to take responsibility for cleanliness help maintain a neat and hospitable atmosphere.
- **3.** Reducing Waste, Water, and Energy: Reducing waste and conserving water and energy are critical steps in attaining sustainability. The college implemented practices like recycling, reducing one time-use items, fixing water leaks, and using energy-efficient applications to minimize its environmental footprint.
- 4. Adopting Environmentally Friendly Activities: Encouraging activities that are friendly to the

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environment, such as composting, plantation, use of solar energy and proper waste disposal.

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**5. Smart Technology for Sustainability:** Using digital tools can significantly reduce the consumption of natural and non-renewable resources. By promoting digital learning, reducing paper use, and energy use through smart technology, the college can minimize its effect on the environment.

#### **The Context**

Our college campus is well known for its significant greenery, which is highly appreciated by all visitors. The Government of Maharashtra honored our college with one lakh rupees as a reward for our green initiative.

A clean and healthy environment nurtures effective learning and provides a favorable environment for education. We are committed to educate and raise awareness among students on issues such as renewable energy sources and effective waste management.

Our primary focus is on energy and water conservation, plantation and effective waste disposable. The students, faculty and staff are dedicated to developing an eco-friendly, sustainable campus and promoting the environmental responsibility.

#### The Practice (Themes of the Programme)

Greening the campus is all about turning around wasteful inefficiencies and using conventional sources of energies for its daily energy needs, correct disposal handling, procurement of environmentfriendly supplies and effective recycling program. Institute has to work out the time bound strategies implement green campus initiatives. These strategies need to be incorporated into the institutional planning and budgeting processes with the aim of developing a clean and green campus.

- 1. Litter and Waste: Assesses the impact of litter and waste on the environment and explores practicalmeans for preventing, reducing and minimizing the amount of litter and waste produced by the campus. The adoption of this theme is obligatory for the initial implementation of the Green-Campus.
- 2. Energy Conservation: Our college actively promotes collaboration among students, staff, and the faculty to raise awareness about the energy issues. We always try to improve energy conservation and efficiency by following sustainable practices, like using energy-saving devices, reducing electricity waste, and monitoring energy consumption.
- **3. Water Conservation and Protection:** Knowing the vital role of water both locally and globally, our college emphasizes the importance of water conservation. We aim to promote awareness of water scarcity issues and implement strategies to protect water sources, ensuring responsible water use across college

campus.

**4. Sustainable Transport and Travel:** To report transportation problems, we work closely with students, staff, and local authorities to raise awareness of sustainable transport options. We focus on practical solutions to improve travel management, such as promoting carpooling, cycling, and the use of public transportation.

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- 5. Biodiversity Preservation: Our campus is home to a diverse range of plant and animal life. We are dedicated to protecting and enhancing this biodiversity by implementing strategies that support the natural environment. Our initiatives include habitat preservation, planting native species, and creating green spaces that promote a healthy ecosystem. The wide variety of plant species supports the dynamic and diverse fauna in the campus. The college is a home for various bird species, which further enhances its ecological distinctiveness. Birds such as the Common Tailorbird, Indian Paradise Flycatcher, Asian Koel, and Purple-rumped Sunbird are frequently sighted on the campus. The presence of these birds not only adds to the campus's biodiversity but also provides students with opportunities for ornithological studies. Butterflies, often considered indicators of a healthy environment, are abundant on the college campus. The presence of different butterfly species, such as the Great Egg fly, Common Grass Yellow, and Common Rose, points to the thriving ecosystem within the campus. These species not only add to the beauty of the campus but also play a crucial role in pollination. This diversity in butterflies enhances the environmental education experience for students, offering them an opportunity to study ecological interactions, pollination biology, and species conservation. Moreover, the presence of butterflies encourages the conservation of their natural habitats, aligning with the college's commitment to ecological sustainability. The diverse flora and fauna also highlight the college's efforts to maintain a balanced ecosystem, where both flora and fauna coexist harmoniously.
- **6. Botany Department Initiatives:** The Botany department maintained a large collection of medicinal plants and a wide variety of plant species on campus. It actively contributes to the college's greenery through continuous care. Additionally, the plantation has become a tradition.

The campus has108 plants species were growing in the college campus belonging to 44 families of angiosperms and 3 Gymnosperms. The total 11 edibles fruit plants, 30 medicinal, 64 ornamental and 3 timber yielding plants are in campus. The plant species list includes well-known varieties such as *Mangifera indica* (commonly known as mango), and *Catharanthus roseus* (periwinkle), which is significant for its ornamental and medicinal properties. Other notable species include *Ficus religiosa* (peepal tree), renowned for its religious and medicinal importance, and *Tectona grandis* (teak), a valuable timber-yielding plant. Additionally, the college campus has state flower of Maharashtra, *Lagerstroemia speciosa*.

7. Green ICT: As technology advances, the environmental impact of ICT has become an important area of focus. Green ICT is an evolving theme on our college, where we discover ways to minimize the environmental footprint of technology. Through collaboration between ICT expert and Green-Campus Committee, we work on reducing energy consumption, e-waste management and other

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environmental impacts connected with use of technology. By focusing and working on these key areas, our college is committed to encouraging an eco-friendly culture.

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#### **Evidences of Success**

Our college has been dedicated to environmental sustainability for many years. As part of our green campus initiative, our college have been honored with prestigious awards. In 2022 and 2023, we received the **Green and Clean College Campus State Level Award** from the *Dnyanjyyoti Bahuddeshiya Sanstha* Ahmednagar. These awards recognized our efforts to make a sustainable and environment-friendly campus. Moreover, our dedication to clean and green campus was acknowledged by the Government of Maharashtra. In 2014, we were awarded the **Chatrapati Shivaji Maharaj** *Vanshree* **State Level Award**, worth 1 lakh rupees. This award highlighted our college's ideal practices in green campus initiatives. These achievements are evidence to our commitment to environment conservation and dedication to create a green college campus.

Total Green cover of the College Campus- Total Are of the Campus is 18200 Sq. Meter and total Green Cover is 10250 Sq. Meter that is 56.30% area fully covered with greenery.

The green campus initiative of our college not only contributes to environmental conservation but also enhances the beauty of our campus and surrounding area. One of the most significant successes of our best practice is the installation of a solar power system, which has led to significant savings on electricity bills. This is clearly reflected in our past energy billing records, signifying the effectiveness of our move towards renewable energy.

Additionally, the prohibition on plastic items and the application of vermiculture and vermicomposting practices have played a crucial role in maintaining a clean and attractive campus. These eco-friendly policies have transformed our college into one of the most beautiful and clean college in the area, making it a best example of environmental management.

As a result of these efforts, our campus has become more attractive to students, faculty and staff. Many students participated to our commitment to sustainability and the peaceful, well-maintained environment. The success of our green campus initiative is evident not only in our reduced environmental impact but also in the growing number of students who choose our college for its eco-friendly status.

The college has successfully reduced waste generation as part of its commitment to environmental conservation.

One key success in this area is our practice of refilling printer cartridges rather than disposing of them. When refilling is not possible, we ensure that the cartridges are returned to the manufacturer, thereby reducing e-waste. Additionally, all paper waste generated on campus is collected and sold to vendors for recycling, further minimizing the waste generation. The other plant-based waste is used in composting These practice shows our practical approach to waste management and reflect the success of our best

practices in development of an eco-friendly campus. By implementing these sustainable measures, the college has significantly reduced its waste while promoting responsible resource use.

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#### **Problems Encountered and Resources Required**

#### **Problems Encountered**

- 1. Initial Costs of Green Practice: Executing green practices, such as installation solar panels, starting up vermiculture, and maintaining greenery, required substantial initial investment. *For ex.* The soil of campus was sandy and unsuitable for plantation, to solve this issue we ordered healthy and nutrient rich soil for successful plantation. Approximately ₹ 987,000 was invested in green initiatives.
- 2. Maintenance of Green Infrastructure: Maintaining the solar power system, vermicomposting units, and greenery on campus requires continuous effort. Regular application of fertilizer and water to of plants, trees, and eco-friendly systems involves labor and as well financial resources.
- **3. Change in Behavioral Awareness:** Encouraging stakeholders to adopt eco-friendly approach, such as reducing use of plastic and proper sorting waste, required continuous awareness and educational efforts. Changing habits and staying committed to sustainability is difficult.
- **4. Handling, transport and disposing:** Though college successfully reduces the waste, manage and coordinate with vendors for recycling paper and returning used printer cartridges requires logistical effort. Ensuring appropriate collection and processing of recyclable materials is difficult.
- **5.** Limited Space: The college has limited space, finding the additional new space for plantation or setting up new systems is more challenging. To maintain the balance between the campus development and greenery is challenging. To solve this problem, we are planning to develop vertical garden future.

#### **Resources Required**

- 1. Financial Resources: The financial support is necessary for expanding and maintaining green campus. Funds are required for upgradation and maintenance of solar energy plants and vermiculture units, and acquiring eco-friendly materials.
- **2. Human Resources**: The technical staff is required for maintaining the solar system. The caretaker for planation, and worker for waste management is essential.
- **3. Partnerships with Vendors and Manufacturers:** The effective partnership with dealers for recycling the paper waste and for returning used printer cartridges are important for our waste management efforts.
- **4. Technological Support:** Recent technology is required to improve the effectiveness of green campus initiatives, such as efficient solar power systems and innovative recycling techniques.



Green energy initiative: - Solar Panels Installed on the college.



**Ecofriendly lights: Use of LED Bulbs/ Power Efficient Equipment** 

GPS Map





**Dustbins for Efficient Solid Waste Management** 





Vermicomposting for Green Campus



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### Rain water harvesting at our college





Pedestrian friendly walk ways



Ban on Plastic: Plastic free campus. Promotion for use of cloth bags.



Transforming the sandy soil to fertile ground



Ecofriendly college campus

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Awarded for excellence in clean and green campus by Hon. Padmashree Rahibai Soma Popere





State level award for the Green and Clean Campus 2022-23 and 2023-24

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	B	otanical Garden Bill	Date 31/3
Sr.No.	Particulars	Quantity	Total Amoun
1	Red Soil ( लाल माती)	60 Brass (Rs. 2000/- Per Brass)	Rs. 1,20,000/
2	Bed Rock Soil ( मुलम)	50 Brass (1500 Per Brass)	Rs. 75,000/-
3	SSP	10 Bags	Rs. 5,000/-
4	FYM/Vermicompost	1500 kg	Rs. 22,500/-
5	Urea	5 Bags	Rs. 15,000/-
6	Trichoderma	50 Kg	Rs. 8,000/-
7	Ornamental Plants	200 Plants	Rs. 15,000/-
8	Indoor Plants	200 Plants	Rs. 15,000/-
9	Medicinal Plants	350 Plants	Rs. 20,000/-
10	Fruit Plants	100 Plants	Rs. 12,000/-
11	Flowering Plants	60 Plants	Rs. 5,000/-
12	Cactus	15 Plants	Rs. 1,500/-
13	Xyrophytes	75 Plants	Rs. 7,500/-
14	Labour Charges	-	Rs. 85,000/-
15	Supervision Charges		Rs. 25,000/-
16	JCB Charges	62.50 Hours (Rs.800/- Per hours)	Rs. 50,000/-
17	Transport Charges	Charges	Rs. 25,000/-
		Total:-	Rs. 4.93.000/-

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\* Amount in words -Four Lakh Ninety Three Thousand Only.



M.V.P.S Arts, Science & Commerce College, Ozar, Tal-Niphad, Dist.- Nashik

Play Ground Bill

Date. 31.3.2021 .

Sr.No.	Particulars	Quantity	Total Amount
1	Levelling (JCB)	14 days Rs 800/- 11200 X5 (5 hours per day)	Rs: 56,000/-
2	Bed Rock Soil	95 Brass (Rs.1500/- Per	Rs 1,42,500/-
	(मुरूम)	Brass)	
3	Red Soil	110 Brass	Rs 2,20,000/-
	( लाल माती)	(Rs. 2000/- Per Brass)	
4	Labour Charges	**	Rs. 50,000/-
5	Supervision Charges		Rs. 25,000/-
		Total:-	Rs. 4,93,500/-

\* Amount in words -Four Lakh Ninety Three Thousand and Five Hundred Only.



Amount invested in Green Intiative

## List of plants in Campus

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Sr. No	Plant Species name	Family	Significance	
1.	Mangifera indica L.	Anacardiaceae	Fruits edible	
2	Polyalthia longifolia (Sonn.)	<b>A</b> nn on o o o o o	Omemorial	
۷.	Thwaites	Annonaceae	Omamentai	
3.	Annona squamosa L.	Annonaceae	Fruits edible	
4.	Plumeria alba L.	Apocynaceae	Ornamental	
5.	Nerium oleander L.	Apocynaceae	Ornamental/ Medicinal	
6.	Cascabela thevetia (L.) Lippold	Apocynaceae	Ornamental	
7.	Calotropis procera (Aiton) Dryand.	Apocynaceae	Ornamental/ Medicinal	
8.	Catharanthus roseus (L.) G.Don	Apocynaceae	Ornamental/ Medicinal	
9.	Carissa carandas L.	Apocynaceae	Fruits edible/ Medicinal	
10.	Alstonia scholaris (L.) R.Br.	Apocynaceae	Medicinal	
11.	Aglaonema commutatum Schott	Araceae	Ornamental	
12	Araucaria columnaris (G.Forst.)	Araucariaceae	Ornamental	
	Hook.	1 Inductur luccuc		
13.	Phoenix sylvestris (L.) Roxb.	Areacaceae	Ornamental	
14.	<i>Dypsis lutescens</i> (H.Wendl.) Beentje & J.Dransf.	Arecaceae	Ornamental	
15.	Chamaedorea seifrizii Burret	Arecaceae	Ornamental	
16.	Dracaena reflexa Lam.	Asparagaceae	Ornamental	
17.	Cordyline fruticosa (L.) A.Chev.	Asparagaceae	Ornamental	
18.	<i>Furcraea foetida</i> (L.) Haw.	Asparagaceae	Ornamental	
19.	Asparagus densiflorus (Kunth) Jessop	Asparagaceae	Ornamental	
20.	<i>Chromolaena odorata</i> (L.) R.M.King & H.Rob.	Asteraceae	Exotic weed	
21.	<i>Tridax procumbens</i> (L.) L.	Asteraceae	Exotic weed	
22.	Spathodea campanulata P.Beauv.	Bignoniaceae	Ornamental	
23.	Tecoma stans (L.) Juss. ex Kunth	Bignoniaceae	Ornamental	
24.	Kigelia africana (Lam.) Benth.	Bignoniaceae	Ornamental	
25.	Jacaranda mimosifolia D.Don	Bignoniaceae	Ornamental	
26.	Dolichandra unguis-cati (L.) L.G.Lohmann	Bignoniaceae	Ornamental	
27.	<i>Opuntia elatior</i> Mill.	Cactaceae	Ornamental	
28.	Canna indica L.	Cannaceae	Ornamental	
29.	Carica papaya L.	Caricaceae	Fruits edible/ Medicinal	
30.	Casuarina equisetifolia L.	Casuarinaceae	Ornamental	
31.	Terminalia catappa L.	Combretaceae	Ornamental/ Seeds edible	
32.	<i>Terminalia arjuna</i> (Roxb. ex DC.) Wight & Arn.	Combretaceae	Medicinal	
33.	<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Combretaceae	Medicinal	
34.	Combretum indicum (L.) DeFilipps	Combretaceae	Ornamental	
35.	Terminalia cuneata Roth	Combretaceae	Medicinal/ Timber vielding	
36.	Tradescantia zebrina Bosse	Commelinaceae	Ornamental	
37.	Tradescantia spathacea Sw.	Commelinaceae	Ornamental	
38.	Platycladus orientalis (L.) Franco	Cupressaceae	Ornamental	
39.	Cycas circinalis L.	Cycadaceae	Ornamental	
40.	<i>Euphorbia milii</i> Des Moul.	Euphorbiaceae	Ornamental	
41.	Ricinus communis L.	Euphorbiaceae	Medicinal	
42.	Jatropha integerrima Jacq.	Euphorbiaceae	Ornamental	

. No	Plant Species name	Family	Significance
43.	Tectona grandis L.f.	Lamiaceae	Timber yielding
44.	Couroupita guianensis Aubl.	Lecythidaceae	Ornamental
45.	Tamarindus indica L.	Leguminosae	Ornamental/ Medicinal
46.	Senna siamea (Lam.) H.S.Irwin & Barneby	Leguminosae	Ornamental
47.	<i>Pithecellobium dulce</i> (Roxb.) Benth.	Leguminosae	Fruits edible
48.	<i>Peltophorum pterocarpum</i> (DC.) K.Heyne	Leguminosae	Ornamental
49.	Caesalpinia pulcherrima (L.) Sw.	Leguminosae	Ornamental
50.	Delonix regia (Hook.) Raf.	Leguminosae	Ornamental
51.	Lysiloma latisiliquum (L.) Benth.	Leguminosae	Ornamental
52.	Albizzia saman (Jacq.) Merr.	Leguminosae	Ornamental
53.	Acacia auriculiformis Benth.	Leguminosae	Ornamental
54.	Cassia fistula L.	Leguminosae	Ornamental/ Medicinal
55.	Pongamia pinnata (L.) Pierre	Leguminosae	Medicinal
56.	Bauhinia variegata L.	Leguminosae	Ornamental
57.	Butea monosperma (Lam.) Taub.	Leguminosae	Ornamental/ Medicinal
58.	Acacia farnesiana (L.) Willd.	Leguminosae	Medicinal
59.	Dalbergia sissoo DC.	Leguminosae	Timber yielding and Medicinal
60.	Parkia biglandulosa Wight & Arn.	Leguminosae	Ornamental
61.	Bauhinia purpurea L.	Leguminosae	Ornamental
62.	Sesbania bispinosa (Jacq.) W.Wight	Leguminosae	Medicinal
63.	Punica granatum L.	Lythraceae	Fruits edible
64.	Lagerstroemia speciosa (L.) Pers.	Lythraceae	Ornamental/ Medicinal- State flower
65.	<i>Magnolia champaca</i> (L.) Baill. ex Pierre	Magnoliaceae	Medicinal
66.	<i>Ceiba pentandra</i> (L.) Gaertn.	Malvaceae	Ornamental
67.	<i>Thespesia populnea</i> (L.) Sol. ex Corrêa	Malvaceae	Ornamental/ Medicinal
68.	Hibiscus rosa-sinensis L.	Malvaceae	Ornamental/ Medicinal
69.	Gossypium hirsutum L.	Malvaceae	Ornamental/ Fibre yielding
70.	Azadirachta indica A.Juss.	Meliaceae	Medicinal
71.	Melia azadirachta L.	Meliaceae	Medicinal
72.	Khaya senegalensis (Desv.) A.Juss.	Meliaceae	Ornamental
73.	Aphanamixis polystachya (Wall.) R.Parker	Meliaceae	Medicinal
74.	Ficus benjamina L.	Moraceae	Ornamental
75.	Ficus religiosa L.	Moraceae	Medicinal
76.	Ficus benghalensis L.	Moraceae	Medicinal
77.	Ficus racemosa L.	Moraceae	Medicinal
78	Artocarpus integer (Thunh ) Merr	Moraceae	Fruits edible
79	Moringa oleifera Lam	Moringaceae	Fruits edible/ Medicinal
80	Muntingia calabura I	Muntingiaceae	Fruits edible
00.	Musa paradisiaca I	Мисасеае	Fruits edible
~ '		M	Ornementel/Medicinel
<u>87</u>	Eucalyntus olohulus I ahill	Wivrfaceae	Urnamenial/Menicinal
82. 83	Eucalyptus globulus Labill.	Myrtaceae	Medicinal
81. 82. 83. 84	<i>Eucalyptus globulus</i> Labill. <i>Syzygium cumini</i> (L.) Skeels <i>Psidium guajaya</i> I	Myrtaceae Myrtaceae	Medicinal Fruits edible

Sr. No	Plant Species name	Family	Significance
86.	Bougainvillea spectabilis Willd.	Nyctaginaceae	Ornamental
87.	Jasminum sambac (L.) Aiton	Oleaceae	Ornamental
88.	Passiflora edulis Sims	Passifloraceae	Fruits edible
89.	Putranjiva roxburghii Wall.	Putranjivaceae	Medicinal
90.	Ziziphus mauritiana Lam.	Rhamnaceae	Fruits edible
91.	Ixora coccinea L.	Rubiaceae	Ornamental
92.	Mussaenda erythrophylla Schumach. & Thonn.	Rubiaceae	Ornamental
93.	<i>Neolamarckia cadamba</i> (Roxb.) Bosser	Rubiaceae	Ornamental/ Medicinal
94.	Hamelia patens Jacq.	Rubiaceae	Ornamental
95.	Citrus limon (L.) Osbeck	Rutaceae	Fruits edible
96.	Aegle marmelos (L.) Corrêa	Rutaceae	Medicinal
97.	Murraya paniculata (L.) Jack	Rutaceae	Ornamental/ Medicinal
98.	Santalum album L.	Santalaceae	Medicinal
99.	Sapindus laurifolius Balb. ex DC.	Sapindaceae	Ornamental/ Medicinal
100.	<i>Madhuca longifolia</i> var. <i>latifolia</i> (Roxb.) A.Chev.	Sapotaceae	Medicinal
101.	Mimusops elengi L.	Sapotaceae	Medicinal
102.	<i>Manilkara hexandra</i> (Roxb.) Dubard	Sapotaceae	Medicinal
103.	Manilkara zapota (L.) P.Royen	Sapotaceae	Fruits edible
104.	Ravenala madagascariensis Sonn.	Strelitziaceae	Ornamental
105.	Holoptelea integrifolia Planch.	Ulmaceae	Timber yielding/ Medicinal
106.	Duranta erecta L.	Verbenaceae	Ornamental
107.	Lantana camara L.	Verbenaceae	Ornamental/ Exotic wee
108	Aloe vera (L.) Burm.f.	Xanthorrhoeaceae	Ornamental/ Medicinal

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