



ENVIRONMENT AND GREEN AUDIT REPORT

(YEAR 2021-2022)

OF

JIJAMATA COLLEGE OF SCIENCE AND ARTS,

DNYANESHWARNAGAR, BHENDE BK.

TAL; NEWASA, DIST; AHMEDNAGAR



PREPARED BY

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CERTIFICATE



GREEN & ENVIRONMENT AUDIT

This is to certify that **Jijamata College of Science and Arts,
Dnyaneshwarnagar, Bhende (BK), Tal-Newasa, Dist -Ahmednagar** has
successfully undergone **Green & Environment Audit** for year 2021-22

Date : 25TH MARCH 2022



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Dr. Adhikrao Yewale

Universe Environment Consultancy, Pune

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Compliance of Observations and Recommendation in Audit year 2020-21.

Sr No	Particulars	Observation	Recommendation	Compliance
1	Green Area /Plantation	<ul style="list-style-type: none"> Total 67 tree species, 15 shrubs species and 1 climber species are observed in the college campus area. 1544 numbers of trees, 203 shrubs and 4 number of Climber are planted in college campus area. Good vegetation was observed at boundary of college. College actively participated in tree plantation Programme College conducted and participated in various Planation activity programs are being organized at college campus and surrounding villages through various activities of college. The plantation program includes various types of indigenous species of ornamental and medicinal wild plant species. 	Review yearly the list of trees planted in the college campus, and allots numbers to the trees along with scientific /botanical and local/common name to the trees.	College reviewed list of trees and updated with new plantation
			•Select endemic or local species for the planation.	Local species selected for the plantation. List tree is given in section 2.1 of report
			Promote environmental awareness as a part of course work in various curricular areas, independent research projects, and community service.	Conducted environmental awareness as a part of course work in various curricular areas, independent research projects, and community service.
			Establish a College Environmental cell that will take responsibility for the whole environment of the college campus.	College established College Environmental cell that will take responsibility for the whole environment of the college campus.
			Establish Environment Policy for the environment conservation nd protection of college.	Established Environment Policy for the environment conservation and protection of college.
			Celebrate every year 5th June as ‘Environment Day’, wildlife week and plant trees on this day to make the campus more Green.	Celebrated environment day, wild life day
			Establish Green library for the students.	Established green library

			Prepare five-year planation Programme /Plan in consultation with management and students.	Prepared five year plantation program
			Establish nature club	Established nature club
2	Water Environment Waste water	<ul style="list-style-type: none"> • The total quantity of water required for drinking, flushing and laboratory use and gardening purposes is assessed is assessed as 99.84KL per day. • Area under plantation is about 30 % of total area of institute (31.65 acre) but most of the plants are more than 10-15 years old so that no need of daily water for those plants. Only garden, lawn and botanical garden required daily water. For hygienic drinking water, Water is treated at water treatment plant by Sugar Factory and provided to college. ➤ Total 85 m3/day sewage is generated. Generated sewage is treated through Septic tank. Over flow of septic tank is used for the gardening. ➤ Septic tanks are provided to treat the generated sewage. ➤ No treatment is provided to waste water generated from laboratories 	<ul style="list-style-type: none"> • Installed sewage treatment plant having capacity of 90CMD and recycle the treated water for flushing and gardening 	No sewage treatment plant installed
			<ul style="list-style-type: none"> • In order to use the treated waste water for flushing a separate plumbing system should be provided. 	Not executed
			<ul style="list-style-type: none"> • Drip irrigation system should be provided to Gardens to minimize water use 	Drip system installed for plantation area
			<ul style="list-style-type: none"> • Liquid waste generated from laboratory should not be disposed off without any treatment 	Liquid waste generated from laboratory is neutralized at small tank and disposed off.
			<ul style="list-style-type: none"> • Fixture for toilet flushing and drinking should be of low flow either by use of aerators or pressure reducing devices or sensor-based control 	Not executed
			<ul style="list-style-type: none"> • Prepare Detailed rain water harvesting plan and implement in next five year to reduce the raw water requirement. 	Rain water harvesting system is installed. All roof top water is collected in earthen tank

			Water quality analysis should be carried through NABL or MOEF accredited laboratory for monthly or quarterly basis	Water quality analysis was accrued out report is enclosed in section 2.5
3	SOLID WASTE MANAGEMENT	<p>The waste generated in the campus includes glass, metals, wrappers, paper, plastics, etc. Old newspapers, used papers and journal files, workshop scrap etc. are given for recycling to external agencies.</p> <p>Glass, metals, plastic and other non-biodegradable wastes are given to external agencies where they are segregated and disposed/ recycled according to the nature of the waste.</p> <p>Biodegradable waste: Leaf litter& food waste is decomposed in composting unit of College.</p> <p>Plastic waste sends to the recycling vendor. Apart from dry solid waste, the campus generates an average of 120kgs of organic waste per day and 20 kgs of processed food waste per day from canteen.</p> <p>In garden a unit of Vermicompost also established which is essential for production of vermicompost and vermiwash as an organic manure which is used as fertilizer for various plants in the garden. Vermi composting plant is in operation in the campus. Food Waste from collage and canteen is mix with leaf litter and use for the Vermi composting. Vermi compost is used</p>	<ul style="list-style-type: none"> Segregate dry and wet waste separately 	Dry and wet waste segregated
			Display the awareness board of solid waste	Displayed boards for solid waste awareness in college campus
			Send all recycling waste glass, cans, white, coloured and brown paper, plastic bottles, batteries, print cartridges, cardboard and furniture to recycling facility or authorized vendor	Complied

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		for plants as manure.		
4	E- Waste	E-waste generated in the college campus is very less in quantity. The E-waste and defective item from computer laboratory is being stored properly. The college management has decided to contact approved E-waste management and disposal facility in order to dispose E-waste in scientific manner	<p>Recycle or safely dispose of computers and electrical equipment's.</p> <p>Use reusable resources and containers and avoid unnecessary packaging where possible.</p> <p>Always purchase recycled resources where these are both suitable and available.</p>	College agreed and committed to comply

1. INTRODUCTION

1.1 GREEN & ENVIRONMENT AUDIT

Green Audit is a process of systematic identification, quantification, recording, reporting and analysis of components of environmental diversity of college. This 'Green Audit' aims to analyze environmental practices within and outside the college campus, which will have an impact on the environment.

Green Audit or Environment Audit focuses on the Green Campus, Waste Management, Water Management, Air Pollution & Energy Management etc. being implemented by the College Management.

The ICC defines Environmental Auditing as

"A management tool comprising a systematic, documented, periodic and objective evaluation of how well environmental organization, management and equipment are performing with the aim of safeguarding the environment and natural resources in its operations/projects."

Green audit is a valuable means for a college to determine how and where they are using the most energy or water or other resources; the college can then consider how to implement changes and make savings. It can create health consciousness and promote environmental awareness, values and ethics. It provides staff and students better understanding of Green impact on campus. If self-enquiry is a natural and necessary outgrowth of a quality education, it could also be stated that institutional self-enquiry is a natural and necessary outgrowth of a quality educational institution. Thus it is imperative that the college evaluate its own contributions toward a sustainable future. As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more prevalent.

Green audit is assigned to the criteria 7 of NAAC, National Assessment and Accreditation Council which is a self-governing organization of India which declares the institutions as Grade A, B or C according to the scores assigned during the accreditation.

As a mandatory requirement of NACC, Green audit was planned for the academic year 021-22 by management of college.

Management decided to conduct green audit yearly through internal as well as external audit team. College was carried out Environment and green audit for the year 2020-21 and also decided by management, Environment and green audit will be carried out in month of March 2022 for the academic year 2021-22.

Table No 1. Audit Team

Sr No	Name of the auditor	Area of Expertise	Designation
On behalf of Jijamata College			
1	Dr. Saswade Ramkisan Raghunath	Botany	Principal
2	Dr Navgire Madhukar Eknath	Nodal Officer	Coordinator/ IQAC
3	Dr Lande Kakasaheb Abasaheb	Geography / Environment	Member
4	Prof. Naik Dhirsing wahrya	Energy Audit	Member
5	Prof. Ghare Pravin Devram	Water Harvesting /Solid and Liquid waste	Member
6	Dr. Gedam Ajit Kashinath	Vermicomposting project	Member
7	Prof Nawale Rohan Vijaykumar	Botany	Member
8	Shri. Gaikwad Dattatraya Bhausaheb	Administration	Member
On behalf of Universe Environment Consultancy			
1	Dr. Adhikrao Yewale	Air Quality, Water quality and Ecology	Member
2	Shri Rahul Patil	Water quality & Soil quality	Member
3	Rupali Mohite	Water Management	Member
4	Shir Yogesh Raskar	Social	Member
5	Shri Dayand Jagdale	Energy	Member

1.2 OBJECTIVES OF ENVIRONMENT & GREEN AUDIT

The main objective of the Environment/Green audit is to promote the management and conservation of Environment in the College Campus. The purpose of the audit is to identify, quantify, describe and prioritize framework of Environment Sustainability in compliance with the applicable regulations, policies and standards.

The main objectives of carrying out Green Audit are:

- *To document the floral and faunal diversity of the college*
- *To Document the water and waste management of the college*
- *To document the waste disposal system*

- *To estimate the Energy requirements of the college.*
- *To document the environmental condition of air, water, soil and noise of the college*
- *To introduce and aware students to real concerns of environment and its sustainability*

1.2.1 TARGET AREAS FOR ENVIRONMENT AND GREEN AUDIT

- **Biodiversity Conservation:** Green area, plantation, Flora diversity, faunal diversity local, endemic species, medicinal plants etc aspect was considered
- **Water and Waste Water:** Water requirement for various activities, source of water, water quality, waste water generation, treatment, recycle and reuse of treated waste water etc.
- **Solid Waste;** Biodegradable waste and non-Biodegradable waste generation, and its disposal.
- **Energy:** Source, Consumption, conservation and alternative energy sources
- **Environment Monitoring:** Ambient Air quality, Noise level, Water quality and Soil quality.

1.2.2 METHODOLOGY

In order to conduct the green audit, the methodology included different tools such as

- Preparation of questionnaire,
- Preparation of data collection formats
- Collection of data
- Physical checking of the campus,
- Observation and review of the documentation,
- Interview of key persons and data analysis, measurements and recommendations.

The study covered the following areas to summarize the present status of environment management in the campus:

- Green area management
- Water management
- Energy Conservation
- Waste management
- E-waste

management

1.3 ABOUT THE COLLEGE

Jijamata college of Science and Arts Dnyeshwarnagar Bhende (BK), Tal-Newasa in Ahmednagar District Maharashtra state. This college is affiliated with Savitribai Phule University Pune. This college is established in June 1992 by Shri.Marutrao Ghule Patil Shikshan Santha' Dnyeshwarnagar Bhende (BK, premier educational institution founded By Hon. Late Shri.Marutrao Ghule Patil veteran social activist which has been imparting higher education KG to PG level in Science & Arts faculty.

Jijamata college of Science and Arts Dnyeshwarnagar Bhende (BK), campus consists of main buildings with ground, first and second floor. The administrative office, Library, Indoor stadium, various HOD cabins, staff rooms, classrooms, various laboratory like Physics, Chemistry, Botany, Zoology, Computer Sciences, etc. are the part of college campus. The college are functioning with basic motto to impart quality, employment, entrepreneur and higher education to mostly rural as well as marginal urban student. Besides this there are one boy's hostel and two ladies hostel buildings for facilitating student accommodation to many rural boys & girl students. Similarly in campus two building are available for residential purpose for teaching as well as non-teaching staff. This college also provides gymkhana facility indoor stadium to student undergoing through various type of physical education. There is also well-furnished library where student studying in various branches have facility to refer books. The college developed botanical garden & green campus.

Total campus Area is 31.65 acre. College is affiliated to Pune University, Pune

College is accredited with NAAC With B' Grade (CGPA 2.72) grade in year 2018by NAAC.

Table No. 2. Details of the College

Sr no	Particulars	Information
1	Name of college	Shri Marutrao Ghule Patil Shikshan Sanstha's Jijamata College of Science and Arts Bhende Tal Newasa Dist Ahmednagar.
2	Address	Dnyeshwarnagar Bhende (BK), Tal-Newasa in Ahmednagar District Maharashtra state.
3	Latitude and Longitude	latitudes – 19°27'14.59"N and longitude – 75° 1'25.75"E
4	Area in acre	31.65
5	Faculty (Arts/commerce/science)	Arts, Science, Commerce

6	Number Student year (2021- 22)	1375
	Boys	801
	Girls	574
7	Principle of College	Dr. Saswade Ramkisan Raghunath
8	Administrative officer	Shri.Ghodechor Bandu Ramchandra
9	Contact Number	02427-255304
10	Email	Principal.jijamatacollege@gmail.com
12	Fax	02427-255309
13	Website	http://jijamatacollege.ac.in

Table No 3 .Board of directors:

Sr.No.	Name	Designation
1	Dr. Narendra Marutrao Ghule Patil (<u>Ex.M.La</u>)	President
2	Shri Chandrashekhar Marutrao Ghule Patil (Exmla)	Vice President
3	Shri. Pandurang Gamaji Abhang (Ex.M.L.A.)	Trustee
4	Adv. Desai Bhausahab Deshmukh	Trustee
5	Shri. Kakasaheb Narayanrao Narwade	Trustee
6	Shri. Vitthalrao Vakilrao Langhe	Trustee
7	Dr. Narayan Karbhari Mhaske	Trustee
8	Shri. Panditrao Rambhau Bhosale	Trustee
9	Shri. Babanrao Murlidhar Bhusari	Trustee
10	Shri. Kakasaheb Abasaheb Shinde	Trustee
11	Shri. Janardhan Rambhau Kadam	Trustee
12	Shri. Gorakshnath Dagdu Gandal	Trustee
13	Shri. Bhausahab Sonyabapu Kangune	Trustee
14	Shri. Shivaji Rajdhar Kolte	Trustee
15	Shri. Machindra Suryabhan Mhaske	Trustee

16	Shri. Sakharam Digambar Lavhate	Trustee
17	Shri. Dipak Tulshiram Nannavare	Trustee
18	Sau. Shankarrao Laxman Pavse	Trustee
19	Sau. Latabai Ashok Misal	Trustee
20	Sau. Ratnamalatai Kashinath Navle Trustee	Trustee
21	Sau. Tarabai Hanuman Jagdale	Trustee
22	Dr. Kshitij Narendraji Ghule Patil	Trustee
23	Shri. Anil Pandit Shewale	Secretary

Table No 4: College offers the following programmes of graduation in Arts and Science faculty.

Sr No	Courses	Started from Year
A	Arts	1994
1	Marathi	
2	Hindi	
3	English	
4	Geography	
5	Political Science	
6	Economic s	
7	Physiology	
B	Science	1992
1	Physics	
2	Chemistry	
3	Botany	
4	Zoology	
5	Computer Science	
6	Statistics	

C	BSc Computer Science	2012-2013
D	B.Com	2013-2014
E	MSc Chemistry	2010-2011
F	MSc Botany	2016-2017
G	MA MARATHI	2009-2010
H	MA ECONOMICS	2010-2011

The college is a reputed educational institution, which has been known for producing outstanding students who take on different careers, as per their academic merit successfully in the society.

The college has rich tradition of co-curricular and extra-curricular activities such as NSS, NCC, Sports and Cultural Activities, which play an important role in the overall personality development of the students.

The students are also reciprocating by their high achievements in academic performance. A large number of students are getting excellent placements in different parts of the country & abroad also.

Table No 5: Details of the Teaching and non-teaching staff

Sr No	Position	Male	Female	Total
A Teaching				
1	Principal	01	0	01
2	Professor	03	0	03
3	Associate Professor	07	0	07
4	Assistant Professor	20	01	21
	Total			32
1	Non Grant	17	10	27
1	CHB	06	02	8
3	Ad-hoc	02	02	04

B. Non-Teaching				
1	Grant	09	0	09
2	Non Grant	15	02	17
	Total			26

Table No 6 : Number students last five years

Years	Courses								Total
	B. A	B. Sc	BSc Comp Sci.	B. Com	MA Marathi	MA ECONOMICS	MSC CHEMISTRY	MSC Botany	
2021-22	327	400	187	235	35	45	100	47	1376
2020-21	381	502	142	275	20	11	89	44	1464
2019-20	448	517	91	258	27	27	62	46	1476
2018-19	348	584	81	232	36	29	48	44	1402
2017-18	391	617	87	213	17	37	8	48	1418
2016-17	345	563	83	172	17	44	38	23	1285
2015-16	384	557	79	117	23	54	38	0	1252

Table No. 7: Hostel strength :2 Buildings

Boys			Girls		
Sr. No	Intake Capacity	Student 21-22	Sr. No	Intake Capacity	Student 21-22
1	100	47	1	120	65

Table No 8: Staff Quarters 02 Building

Building No 01		Building No 02		Gross Total
Sr. No	Total Rooms	Sr. No	Total Rooms	
1	08	1	08	16

THE GREEN CAMPUS, ENERGY AND ENVIRONMENT POLICY

The policy Jijamata College of Science and Arts is conserve, protect & save the environment , minimize use of energy and natural resources with following objectives

- **To build awareness among the students about importance and conservation of natural resources.**
- **To develop and adopt environment friendly approach in the students.**
- **Ensure that energy and water are used responsibly and conserved through innovative practices and procedures.**
- **Provide all institute staff with the knowledge and tools needed to meet the goals of this policy and to actively participate in efforts to prevent negative environmental impacts.**
- **Measure progress toward our environmental goals. The Office of Management, Health and Back Safety Branch, in coordination with the Top.**

1.2 LOCATION OF THE COLLEGE

The college located at Bhende village, in Newasa Tehsil of Ahmednagar District. The college is located in the rural area. It is geographically located at latitudes – 19°27'14.59"N and

75°

longitude – 1°25.75"E.

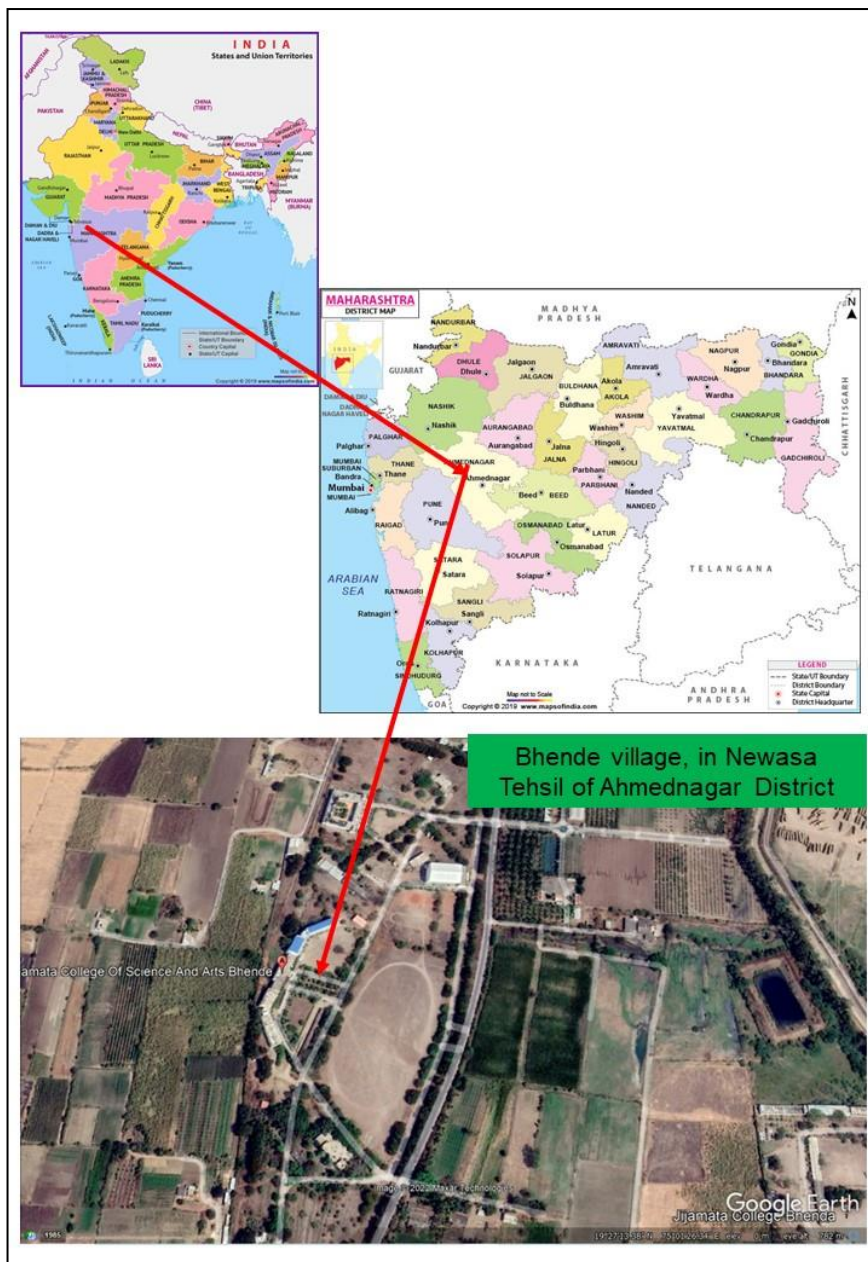


Figure No. 1 : College Location Map: Source Google Earth



Figure No. 2 : Google Image

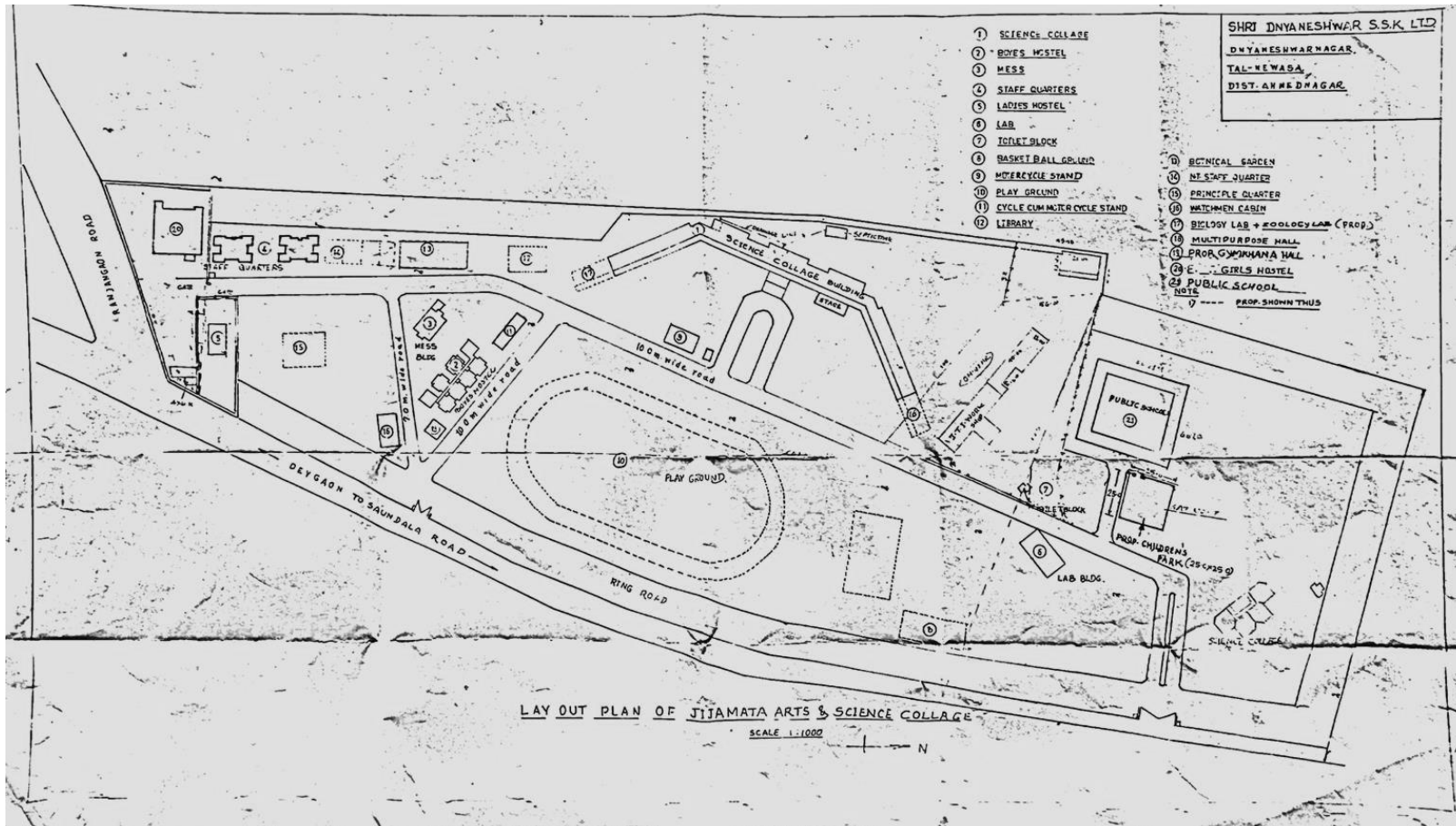


Figure No. 3 : Project Layout

1.4 COLLEGE INFRASTRUCTURE AND FACILITIES



Indoor Stadium



Playground with 400 meter running track



Parking to students



College Building



Staff Quatres and Hostels

1.5 REWARDS AND CERTIFICATE

- Extension activities are carried out in the neighborhood community, sensitizing students to social issues, for their holistic development, and impact thereof during the year 2020-21
- Number of extension and outreach programs conducted by the institution through NSS/NCC/Red cross/YRC etc., (including the programs such as Swachh Bharat, AIDS awareness, Gender issues etc. and/or those organized in collaboration with industry, community and NGOs) during the year and Number of students participating in extensionactivities during year
- Sensitization of students and employees of the Institution to the constitutional obligations:values, rights, duties and responsibilities of citizens
- Institution celebrates / organizes national and international commemorative days, events and festivals

The College takes pride in commemorating the national and international days that mark the important aspect of historical events to instil a sense of patriotism and to promote nationalism among the staff and students' community. Important cultural festivals which introduce the rich cultural heritage of our ancient traditions are celebrated with pomp quietly. During this academic year 2020-21 the following days were celebrated.

- International yoga day (21st June)
- Republic day (26 January) 72nd Republic Day was celebrated patriotic fervour to commemorate the adoption of activities of our constitution,
- Savitribai Phule birth anniversary (3rd January)
- Mahatma Gandhi's birth anniversary (2 October)
- Birth Anniversary of Babasaheb Ambedkar (14th April)
- Maharashtra Day (1st May)
- Independence Day (15th August)
- Birth anniversary of Mahatma Jyotiba Phule.
- The birth anniversary of Marutrao Ghule Patil. (15 September)
- Environment Day (5 June) world Environment Day celebrate in college teacher and students, this day we planted 100 plants in our campus.

Sr. No.	Title of the Activities	Date of Program	Organizing unit / agency	No of Teachers coordinated such activities	No of Students participated in such activities
1	Mahatma Gandhi and Lal Bahadur Shastri Jayanti	02-10-2020	National Service Scheme	5	25
2	Dr. A.P.J. Abdul Kalam Jayanti and Reading day	15-10-2020	Library	25	150
3	Teachers Day	05-09-2020	Student Welfare	25	20
4	Loknete Marutrao Ghule Patil Jayanti	15-09-2020	MGPS Education Society	45	300
5	Campus Cleaning	27-08-2020	National Service Scheme	30	200
6	Womens Day	08-03-2021	Jijamata Vidyarthini Manch	10	81
7	Savitribai Phule Jayanti	03-01-2021	National Service Scheme	20	90
8	Yoga Day	21-06-2020	Physical Education	60	170
9	Plantation in College Campus	20-08-2020	National Service Scheme	35	40
10	Maharashtra Day	01-05-2021	Student Welfare	40	25
11	Republic Day	26-01-2021	Physical	60	500

			Education		
12	Birth Anniversary of Mahatma Jyotiba Phule	11-04-2021	National Service Scheme	25	110
13	Sadbhavna Din	30-01-2021	National Service Scheme	3	47
14	Covid-19 RTPCR Testing camp	11-02-2021	Physical Education	4	52
15	Covid-19 Awareness Lecture	28-10-2020	Physical Education	15	35
16	Covid-19 Protection disinfection of collegecampus	04-08-2020	Physical Education	5	0
17	Plantation in College Campus	04-07-2020	National Service Scheme	4	62
18	Blood Donation Camp	31-12-2020	National Service Scheme	3	48

ENVIRONMENT MANAGEMENT CELL

Sr No	Name of the auditor	Area of Expertise	Designation
1	Dr. Saswade Ramkisan Raghunath	Botany	Principal
2	Dr Navgire Madhukar Eknath	Nodal Officer	Coordinator/ IQAC
3	Dr Lande Kakasaheb Abasaheb	Geography / Environment	Member
4	Prof. Naik Dhirsing wahrya	Energy Audit	Member
5	Prof. Ghare Pravin Devram	Water Harvesting /Solid and Liquid waste	Member
6	Dr. Gedam Ajit Kashinath	Vermicomposting project	Member
7	Prof Nawale Rohan Vijaykumar	Botany	Member
8	Shri. Gaikwad Dattatraya Bhausahab	Administration	Member

2.0 ANALYSIS

2.1 GREEN AREA/ PLANTATION

Green area or plantation includes the plant, greenery and landscaping of the campus to enhance the environment of the area. This will help to increase the beauty of the campus. The college area is diverse with a variety of plant species performing a variety of functions. Most of the plant species are planted through various plantation programmes organized by the college.

The plantation in college have increased the quality of life, not only in college campus but also the surrounding area in term of temperature control, contributing to improving air quality, soil conservation, water conservation and habitat for birds and small animals etc.

Many species of birds are dependent on these trees mainly for food and shelter. Nectar of flowers and plants is a favorite of birds and many insects. Leaf – covered branches keep many animals, such as birds and squirrels, out of reach of predators.

A thick belt of large shady trees in the periphery of the college have found to be bringing down noise and cut down dust. Thus, the college has been playing a significant role in maintaining the environment of the entire surrounding area of college.

2.1.1 FLORA DIVERSITY

Table 1. List of plant species

Sr No	Botanical Name	Local Name	Family	No of Plants	Type
1	<i>Acacia nilotica</i>	Babul tree	Fabaceae	7	Tree
2	<i>Adansonia digitata</i>	Gorakchinch	Bombacaceae	3	Tree
3	<i>Adathoda vasica</i>	Adulsa	Acanthaceae	5	Shrub
4	<i>Aegle marmelos</i>	Bel	Rutaceae	4	Tree
5	<i>Albizia julibrissin</i>	Silk plant	Fabaceae	2	Tree
6	<i>Alstonia scholaris</i>	Saptaparni	Apocynaceae	35	Tree
7	<i>Annona reticulata</i>	Ramphal	Annonaceae	4	Tree
8	<i>Annona squamosa L.</i>	Shitaphal	Annonaceae	49	Tree
9	<i>Araucaria columnaris J. R. Forst Hook.</i>	X-Mas tree	Araucariaceae	2	Tree
10	<i>Artocarpus heterophyllus</i>	Jackfruit/fanas	Moraceae	3	Tree
11	<i>Azadirachta indica</i>	Neem	Meliaceae	121	Tree
12	<i>Bambusa bamboo</i>	Bamboo tree	Poaceae	1	Tree
13	<i>Bauhinia racemosa</i>	Apta	Caesalpiniaceae	12	Tree
14	<i>Bauhinia variegata</i>	Raktakanchan	Fabaceae	17	Tree
15	<i>Bombax ceida</i>	Silk cotton tree	Malvaceae	2	Tree
16	<i>Bougainvillea spectabilis</i>	Kagadigulab	Nyctaginaceae	7	Shrub
17	<i>Butea monosperma</i>	Palas	Fabaceae	1	Tree
18	<i>Callistemon lanceollatus</i>	Bottle brush	Myrtaceae	7	Tree
19	<i>Calotropis giaganthe</i>	Ruie	Asclepiadaceae	15	Shrub
20	<i>Canna indica L.</i>	Kardal	Cannaceae	10	Shrub
21	<i>Capparis zeylanica</i>	Ceylon caper	Capparaceae	3	Tree
22	<i>Carica papaya</i>	Papaya	Caricaceae	9	Tree
23	<i>Cassia fistula</i>	Golden rain tree	Caesalpiniaceae	40	Tree
24	<i>Cassia marginata Roxb.</i>	Red cassia	Caesalpiniaceae	2	Tree
25	<i>Cassia siamea Lam.</i>	Yellow Cassia	Caesalpiniaceae	75	Tree
26	<i>Catharanthus roseus L.</i>	Sadaphuli	Apocynaceae	50	Shrub
27	<i>Clitoria ternatea L.</i>	Gokharna	Fabaceae	4	Tree
28	<i>Cocus nucifera</i>	Coconut	Aracaceae	46	Tree
29	<i>Cordia dichotoma G. Forst</i>	Bhokar	Boraginaceae	1	Tree
30	<i>Cuscuta refelxa Roxb.</i>	Amar bel	Convolvaceae	2	Tree
31	<i>Cycas revolute</i>	Cycas	Cycadaceae	5	Tree

32	<i>Dalbergia sisso Roxb.</i>	Shisham	Fabaceae	59	Tree
33	<i>Delonix regia (Box ExHook)</i>	Gulmohar	Fabaceae	15	Tree
34	<i>Dypsis l utescens H. Wendl</i>	Areca palm	Arecaceae	10	Shrub
35	<i>Emblica officinalis</i>	Amla	Phyllanthaceae	7	Tree
36	<i>Eucalyptus lanceolatus</i>	Nilgiri	Myrtaceae	10	Tree
37	<i>Ficus benghalensis</i>	Wad/Banyan	Moraceae	7	Tree
38	<i>Ficus benjamina L.</i>	Weeping fig	Moraceae	27	Shrub
39	<i>Ficus elastic Roxb ex</i>	Rubber tree	Moraceae	2	Tree
40	<i>Ficus racemosa</i>	Umbar	Moraceae	3	Tree
41	<i>Ficus religiosa</i>	Pimpel	Moraceae	4	Tree
42	<i>Ixora coccinea</i>	Ixora/Rugmini	Rubiaceae	22	Shrub
43	<i>Lantana Camera</i>	Ghaneri	Verbenaceae	20	Shrub
44	<i>Leucaena leucocephala</i>	Subhabul	Fabaceae	16	Tree
45	<i>Limonia acidissima L.</i>	Kauth	Rutaceae	2	Tree
46	<i>Livistona chinensis</i>	Fan palm	Arecaceae	2	Tree
47	<i>Madhuca longifolia</i>	Sontharad	Sapotaceae	2	Shrub
48	<i>Mangifera indica</i>	Mango/Amba	Anacardiaceae	53	Tree
49	<i>Milingtonia hortensis</i>	Jasmine plant/Buuch	Bignoniaceae	22	Tree
50	<i>Mirabilis jalapa L.</i>	4 O clock plant	Nyctaginaceae	2	Shrub
51	<i>Murraya koenigii</i>	Kadipatta	Rutaceae	5	Tree
52	<i>Musa paradisiaca L.</i>	Banana	Musaceae	6	Tree
53	<i>Neolamarckia cadamba</i>	Cadamba	Rubiaceae	3	Tree
54	<i>Nephrolepis exaltata L.</i>	Fish bone Fern	Nephrolepidacea e	26	Shrub
55	<i>Nyctanthes arbor-tristis L.</i>	Parijaat	Oleaceae	3	Tree
56	<i>Parkinsonia aculeate L.</i>	Jelly bean tree	Fabaceae	2	Tree
57	<i>Peltophorum pterocarpum</i>	Soanmohar	Fabaceae	367	Tree
58	<i>Piper betle L.</i>	Banaras wel	Piperaceae	4	climber
59	<i>Pithcolombium dulce (Roxb)</i>	Vilayati Chinch	Fabaceae	1	Tree
60	<i>Plumeria obtuse</i>	chapha	Apocynaceae	5	Tree
61	<i>Polyalthia longifolia</i>	Ashoka	Annonaceae	108	Tree
62	<i>Pongania pinnata</i>	Karanj	Fabaceae	152	Tree
63	<i>Psidium guajava</i>	Peru	Myrtaceae	13	Tree
64	<i>Rauwolfia serpentine</i>	Sarpagandha	Apocynaceae	2	Tree
65	<i>Ricinus communis</i>	Castor	Euphorbiaceae	1	Shrub
66	<i>Roystone aregia</i>	Cuban royalpalm	Arecaceae	2	Tree
67	<i>Samniea saman</i>	Shiris	Mimoceaceae	7	Tree
68	<i>Santalum album</i>	Chandan	Santalaceae	6	Tree
69	<i>Saraka Indica</i>	Sitecha Ashok	Fabaceae	10	Tree

70	<i>Spathodia campanulata</i>	Fountain tree	Bignoniaceae	14	Tree
71	<i>Swetenia mahugani</i>	Mahoguni	Meliaceae	4	Tree
72	<i>Syzygium cumini L.</i>	Jambhul	Myrtaceae	10	Tree
73	<i>Syzygium cumini L.</i>	Jambhul	Myrtaceae	4	Tree
74	<i>Tabernaemontana divaricate R. Br.</i>	Chandanipat	Apocynaceae	4	Shrub
75	<i>Tamarindus indica</i>	Chinch, Imli	Fabaceae	49	Tree
76	<i>Tecoma stans L.</i>	Yellow bells	Bignoniaceae	38	Tree
77	<i>Tectona grandis</i>	Burma/ Saag	Lamiaceae	9	Tree
78	<i>Terminalia arjuna</i>	Arjun tree	Combretaceae	3	Tree
79	<i>Terminalia catappa L.</i>	Badam	Combretaceae	8	Tree
80	<i>Thespesia populnea</i>	Indian Tulip tree/Ranbhendi	Malvaceae	2	Shrub
81	<i>Thevetia peruviana</i>	Yellow Oleander	Apocynaceae	21	Tree
82	<i>Thuja occidentalis</i>	Morpankhi	Cupressaceae	20	Tree
83	<i>Ziziphus jujuba</i>	Bore	Rhamnaceae	13	Tree
		Total		1751	

Total 67 tree species, 15 shrubs species and 1 climber species are observed in the college campus area.

- 1544 numbers of trees, 203 shrubs and 4 number of Climber are planted in college campus area.
- Good vegetation was observed at boundary of college.
- College actively participated in tree plantation Programme
- College conducted and participated in various Planation activity programs are being organized at college campus and surrounding villages through various activities of college.
- The plantation program includes various types of indigenous species of ornamental and medicinal wild plant species.

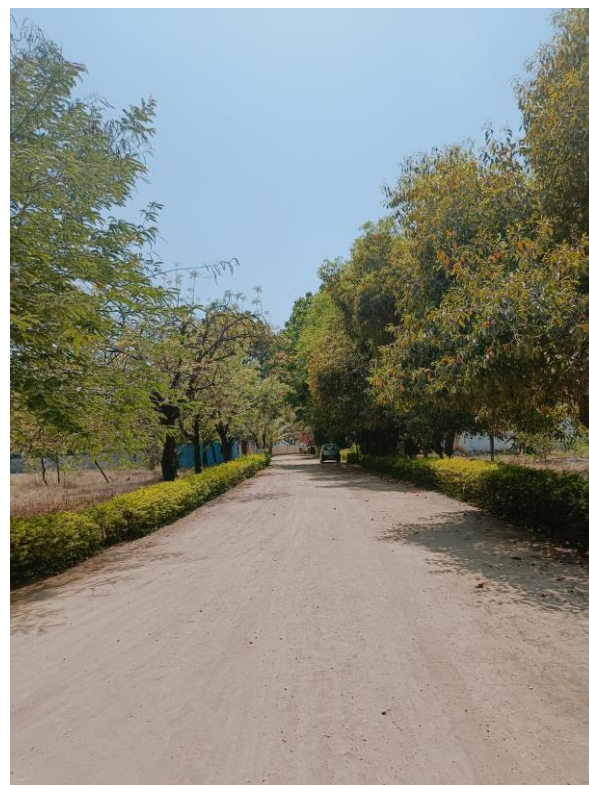
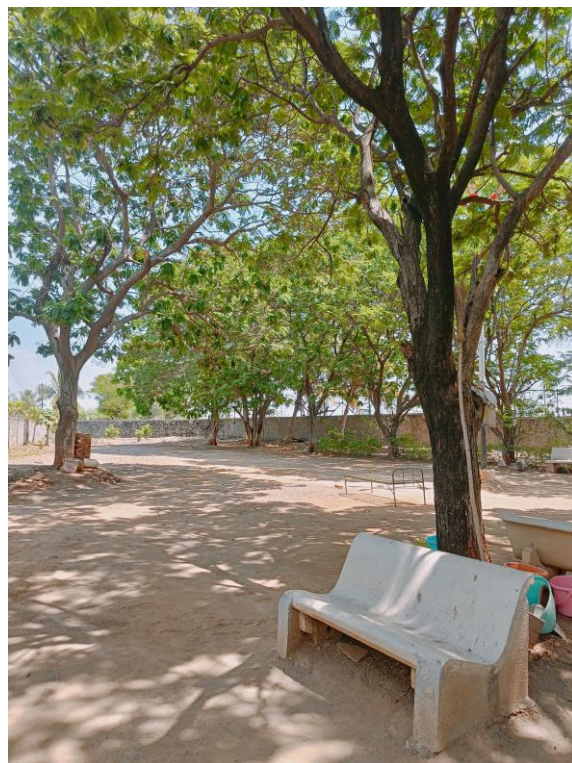
Plantation of in year 2021-22

Plant No.	Botanical Name	Local Name	Family	No.of plants in campus
1	<i>Delonix regia</i> (Box.ExHook)	Gulmohar	Fabaceae	15
2	<i>Emblica officinalis</i>	Amla	Phyllanthacea	6

			e	
3	<i>Madhuca longifolia</i>	Sontharad	Sapotaceae	3
4	<i>Bauhinia variegata</i>	Raktakanchan	Fabaceae	18
5	<i>Catharanthus roseus L.</i>	Sadaphuli	Apocynaceae	4
6	<i>Araucaria columnaris J.R. Forst Hook.</i>	X-Mas tree	Araucariaceae	3
7	<i>Cordia dichotoma G. Forst</i>	Bhokar	Boraginaceae	2
8	<i>Parkinsonia aculeata L.</i>	Jelly bean tree	Fabaceae	3
9	<i>Callistemon lanceollatus</i>	Bottle brush	Myrtaceae	6
10	<i>Cassia marginata Roxb.</i>	Red cassia	Caesalpiniaceae	3
11	<i>Syzygium cumini L.</i>	Jambhul	Myrtaceae	12
12	<i>Annona squamosa L.</i>	Shitaphal	Annonaceae	45
13	<i>Terminalia catappa L.</i>	Badam	Combretaceae	9
14	<i>Nyctanthes arbor-tristis L.</i>	Parijaat	Oleaceae	4
15	<i>Canna indica L.</i>	Kardal	Cannaceae	9
16	<i>Tabernaemontana divaricata R.Br.</i>	Chandanipat	Apocynaceae	5
17	<i>Clitoria ternatea L.</i>	Gokharna	Fabaceae	5
18	<i>Piper betle L.</i>	Banaras wel	Piperaceae	5
19	<i>Ficus racemosa</i>	Umbar	Moraceae	2
	<u>Total</u>			<u>159</u>







2.1.2 FAUNAL DIVERSITY

2.1.3 BOTANICAL GARDEN

Botanical garden is developed in 3000 sq.ft area in college campus. The garden has rich flora having approximately 63 Plant Species

The plants are of different ecological groups such as mesophytes, xerophytes, hydrophytes as well as it includes rock garden, pond ecosystem, oxy-park, medicinal plants, ornamental plants and various types of hedges and edges.

A botanical garden is an institution for botanical research, especially on the native flora of the region.



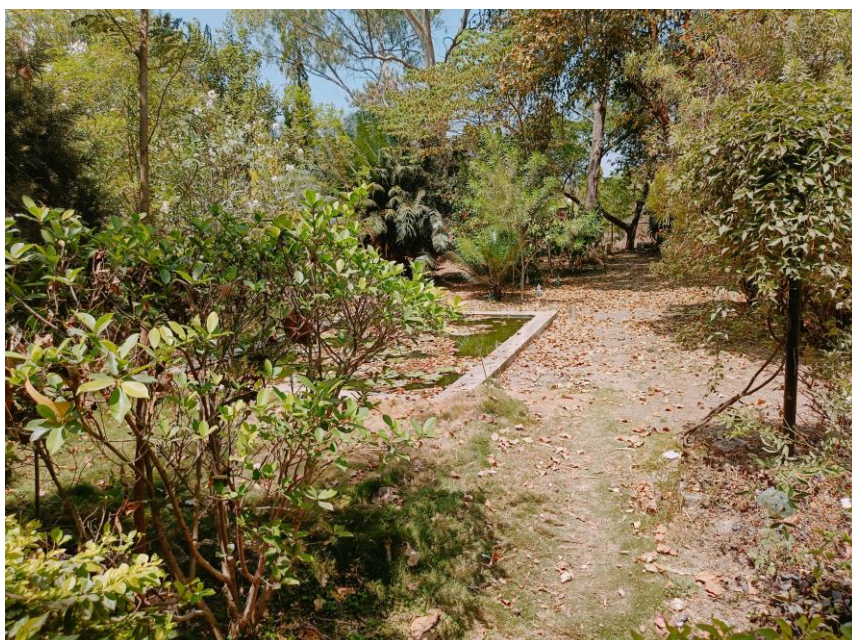
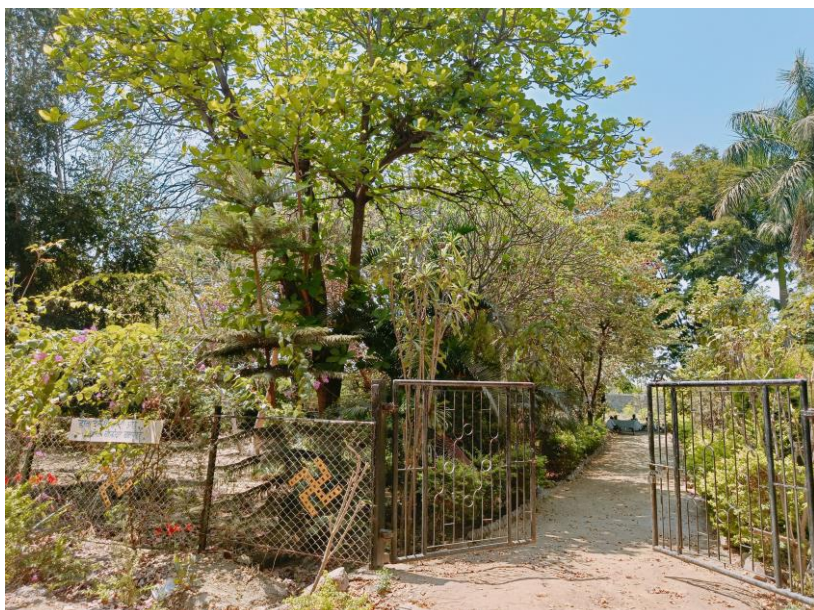
Botanical Garden

Functions of Botanical Gardens:

The botanical gardens are the natural source of science and culture. Functions of Botanical Gardens are as follows.

- Botanical gardens act as out-door laboratories.
- Initiate studies on the tropical and temperate ecosystems and their biota, before they are lost to science and preserve such systems.

- Serve as centres of gene pools or germplasm bank of wild relatives of economically important plants.
- Establish Nature centers and youth Museums to focus attention on destruction of tropical and temperate ecosystem, environmental degradation.



List of plants in Botanical Garden

Plant No.	Botanical Name	Local Name	Family
1	<i>Eucalyptus lanceolatus</i>	Nilgiri	Myrtaceae
2	<i>Pongania pinnata</i>	Karanj	Fabaceae

3	<i>Azadirachta indica</i>	Neem	Meliaceae
4	<i>Spathodia campanulata</i>	Fountain tree	Bignoniaceae
5	<i>Mangifera indica</i>	Mango/Amba	Anacardiaceae
6	<i>Musa paradisiaca L.</i>	Banana	Musaceae
7	<i>Bombax ceida</i>	Silk cotton tree	Malvaceae
8	<i>Plumeria obtuse</i>	chapha	Apocynaceae
9	<i>Murrayakoenigii</i>	Kadipatta	Rutaceae
10	<i>Nephrolepis exaltata L.</i>	Fish bone Fern	Nephrolepidaceae
11	<i>Adathoda vasica</i>	Adulsa	Acanthaceae
12	<i>Cycas circianalis</i>	Cucus	Cycadaceae
13	<i>Asparagus racemosus</i>	Shatavari	Asparagaceae
14	<i>Vinca rosea</i>	Madagascar periwinkle,	Apocynaceae
15	<i>Origanum majorama</i>	Marjoram	Lamiaceae
16	<i>Bougainvillea spectabilis</i>	Kagadigulab	Nyctaginaceae
17	<i>Cassia fistula</i>	Golden rain tree	Caesalpiniaceae
18	<i>Lantana Camera</i>	Ghaneri	Verbenaceae
19	<i>Bauhinia variegata</i>	Raktakanchan	Fabaceae
20	<i>Catharanthus roseus L.</i>	Sadaphuli	Apocynaceae
21	<i>Araucaria columnaris J. R. Forest Hook.</i>	X-Mas tree	Araucariaceae
22	<i>Callistemon lanceollatus</i>	Bottle brush	Myrtaceae
23	<i>Terminalia catappa L.</i>	Badam	Combretaceae
24	<i>Canna indica L.</i>	Kardal	Cannaceae
25	<i>Tabernaemontana divaricate R. Br.</i>	Chandanipat	Apocynaceae
26	<i>Piper betle L.</i>	Banaras wel	Piperaceae
27	<i>Ficus racemosa</i>	Umbar	Moraceae
28	<i>Thuja occidentalis</i>	Morpankhi	Cupressaceae
29	<i>Aegle marmelos</i>	Bel	Rutaceae
30	<i>Santalum album</i>	Chandan	Santalaceae
31	<i>Cocus nucifera</i>	Coconut	Aracaceae
32	<i>Rauvolfia serpentine</i>	Sarpagandha	Apocynaceae
33	<i>Swetenia mahugani</i>	Mahoguni	Meliaceae
34	<i>Cycas revolute</i>	Cycas	Cycadaceae
35	<i>Manilkara zapota</i>	Chikoo	Sapotaceae
36	<i>Psidium guajava</i>	Peru	Myrtaceae
37	<i>Peltophorum pterocarpum</i>	Soanmohar	Fabaceae
38	<i>Butea monosperma</i>	Palas	Fabaceae
39	<i>Costus pictus</i>	costus	Coastaceae
40	<i>Ocimum sanctum</i>	Tulas	Lamiaceae
41	<i>Cymbopogon citrates</i>	Gavati Chaha	Poaceae
42	<i>Hibiscus rosa-sinesis</i>	Jaswand	Malvaceae
43	<i>Zamia pygmaea</i>	guayra,	Cycadaceae
44	<i>Ficus panda</i>	Nandhrukha	Moraceae

45	<i>Nerium olender</i>	Kanher	Apocynaceae
46	<i>Jatropha integerrimo</i>	Jatropha	Euphorbiaceae
47	<i>Mentha spicata</i>	Pudina	Lamiaceae
48	<i>Thunbergia grandiflora</i>	Motha Pandhara	Acanthaceae
49	<i>Agave americana</i>	Ghaypat	Asparagaceae
50	<i>Putranjiva roxburghii</i>	Putrajivi	Putranjivaceae
51	<i>Sansevieria trifasciata</i>	snake plant	Asparagaceae
52	<i>Pedilanthus tithymaloides</i>	nival	Euphorbiaceae
53	<i>Terminalia chebula</i>	Hirda	Combretaceae
54	<i>Terminalia bellirica</i>	Behada	Combretaceae
55	<i>Commiphora wightii</i>	guggul	Burseraceae
56	<i>Opuntia elatior</i>	Phadya Nivadung	Cactaceae
57	<i>Ananas comosus</i>	Ananus	Bromeliaceae
58	<i>Ruta graveolenus</i>	Rue	Rutaceae
59	<i>Cupressus macrocarpa</i>	saru	Cupressaceae
60	<i>Ravenala madagascariensis</i>	Travellers Palm	Strelitziaceae
61	<i>Caryota mitis;</i>	Fish tail palm	Arecaceae
62	<i>Plumeria pudica</i>	Nag champa	Apocynaceae
63	<i>Casuarina equisetifolia;</i>	Suru	Casuarinaceae

List of Medicinal plants in Botanical Garden

Sr. No.	Name of the plant	Local name	Family	Plant part used
1	<i>Eucalyptus lanceolatus</i>	Nilgiri	Myrtaceae	Leaves, bark
2	<i>Aegle marmelos</i>	Bel	Rutaceae	fruits
3	<i>Rauwolfia serpentine</i>	Sarpgandha	Apocynaceae	Roots, Fruits,leaves
4	<i>Asparagus racemosus</i>	Shatavari	Asparagaceae	Roots
5	<i>Adathoda vasica</i>	Adulsa	Acanthaceae	leaves
6	<i>Vinca rosea</i>	Sadaphuli	Apocynaceae	leaves
7	<i>Origanum majorana</i>	Marwa	Lamiaceae	Leaves
8	<i>Ocimum sanctum</i>	Tulas	Lamiaceae	Leaves
9	<i>Cymbopogon citrates</i>	Gavati chaha	Poaceae	leaves
10	<i>Mentha spicata</i>	Pudina	Lamiaceae	Leaves
11	<i>Azadirachta indica</i>	Neem	Meliaceae	Leaves,stem,fruit
12	<i>Terminalia chebula</i>	Hirda	Combretaceae	Fruits
13	<i>Terminalia bellirica</i>	Beheda	Combretaceae	fruits

14	<i>Commiphora wightii</i>	Guggul	Burseraceae	fruits
15	<i>Aloe vera</i>	korphad	Asphodelaceae	Leaves
16	<i>Murraya koenigii</i>	Kadipatta	Rutaceae	Leaves
17	<i>Pelargonium citrosum</i>	Odomus plant	Geranaceae	Leaves
18	<i>Pelargonium hortorum</i>	Geranium plant	Geranaceae	Leaves
19	<i>Ruta graveolens</i>	Satapa	Rutaceae	Entire plant
20	<i>Pandanus odorifer</i>	Kewda	<i>Panadanaceae</i>	fruit
21	<i>Chlorophytum borivilianum;</i>	Safed Musli	Asperagaceae	Roots
22	<i>Acorus calamus;</i>	vekhand	<i>Acoraceae</i>	fruit

2.2 WATER & WASTE WATER MANAGEMENT

Water is a natural resource all living things are depend on water. We need to use water wisely to ensure that drinkable water is available for all, now and in the future. Water auditing is conducted for the evaluation of facilities of water requirement,

SOURCES AND FACILITIES FOR WATER TREATMENT AND ITS REUSE.

2.2.1 WATER REQUIREMENT

In college campus following main uses of water

Main water uses in the campus

- Drinking
- Lab
- Cleaning
- Toilets
- Washing
- Office uses
- Garden

Water source: Mula right bank canal & Grampanchayat Bhenda.

Water tank having capacity of 1 lakh litr is constructed by college



Water requirement for year

2020-21 is

calculated based on the number of students, staff & garden area etc.

Sr No	Details	Number	Water Requirement per head lit/day as per NBC Norms 2016			Total Lit/day
			Domestics	Flushing	Total	
1	Students	1464	25	20	45	65880
2	Staff	97	25	20	45	4365
3	Hostel for Girls & Boys	220	90	45	135	14850
4	Staff Quarter	50	90	45	135	6750
						91845

*Estimation of water requirement for drinking and domestic use as per NBC 2016,

BIS

1	Domestic water	91845lit/day
2	Department/ Laboratory Use Chemistry, Botany & Zoology	2000 lit /day
3	Garden & Lawn	6000 lit /day
	Total Water	99845 lit/day (99.84 M3/day)

- The total quantity of water required for drinking, flushing and laboratory use and gardening purposes is assessed as 99.84 liters per day.
- Area under plantation is about 30 % of total area of institute (31.65 acre) but most of the plants are more than 10-15 years old so that no need of daily water for those plants. Only garden, lawn and botanical garden required daily water.
- For hygienic drinking water, Water is treated at water treatment plant by Sugar Factory and provided to college.

2.2.2 WASTE WATER GENERATION & TREATMENT

- Total 85 m3/day sewage is generated. Generated sewage is treated through Septic tank. Over flow of septic tank is used for the gardening.
- Septic tanks are provided to treat the generated sewage.
- No treatment is provided to waste water generated from laboratories

2.2.3 WATER CONSERVATION

- Roof top Rain water harvesting system is installed and water collected at natural tank behind the Main Building of college. Collected water will be used for gardening after rainy season in month of October to December.



Natural Pond for Rain Water Storage

- Rain water is collected at 2000 lit capacity tank and are using for the chemistry department laboratory.



Rain water harvested at Tank

Rainwater Harvesting Calculations

- Area for Rainwater Harvesting = 2870 SQ. M
- Average Seasonal Rainfall in Newasa Taluka from last five year = 531 MM OR 0.531 M
- Run-Off Co-Efficient = 0.9
- Rain water harvesting potential = $0.531 \times 2870 \times 0.9 = 1371$ CU. M

2.3 SOLID WASTE MANAGEMENT

To reduce waste in the college campus, recycling efforts are taken. Waste is collected and segregated properly. Students, faculty, and staff are aware and educated on proper waste management practices such as waste source and disposal, plastic waste, paper waste, food waste, and recycling. Solid waste is divided into two categories: dry waste and wet waste

- Wet waste: biodegradable waste
- Dry waste: no Biodegradable waste

2.3.1 WASTE GENERATION IN COLLEGE CAMPUS

Category	Quantity kg/day	Disposal
Paper Waste	5	Sale to Vendor for recycling
Plastic waste	4	Sale to Vendor for recycling
Glass waste	0.50	Sale to Vendor for recycling
Metal waste	2.0	Sale to Vendor for recycling
Canteen waste (Food waste)	20	Vermi composting and used as manure for garden
Garden waste	120	Vermi composting and used as manure for garden

2.3.2 OBSERVATIONS

- The waste generated in the campus includes glass, metals, wrappers, paper, plastics, etc. Old newspapers, used papers and journal files, workshop scrap etc. are given for recycling to external agencies.
- Glass, metals, plastic and other non-biodegradable wastes are given to external agencies where they are segregated and disposed/ recycled according to the nature of the waste.
- Biodegradable waste: Leaf litter& food waste is decomposed in composting unit of College.

- Plastic waste sends to the recycling vendor. Apart from dry solid waste, the campus generates an average of 120kgs of organic waste per day and 20 kgs of processed food waste per day from canteen.
- In garden a unit of Vermicompost also established which is essential for production of vermicompost and vermiwash as an organic manure which is used as fertilizer for various plants in the garden. Vermi composting plant is in operation in the campus. Food Waste from collage and canteen is mix with leaf litter and use for the Vermi composting. Vermi compost is used for plants as manure.
- Clean and neat College campus was observed during the visit.

2.4 E –WASTE

E- waste is becoming major thread to the whole world. Its toxic emissions mixed with virgin soil and air and causing harmful effects to the entire biota either directly or indirectly. Direct impacts include release of acids, toxic compounds including heavy metals, carcinogenic chemicals and indirect effects such as bio magnification of heavy metals

2.6.1 OBSERVATIONS;

E-waste generated in the college campus is very less in quantity. The E-waste and defective item from computer laboratory is being stored properly. The college management has decided to contact approved E-waste management and disposal facility in order to dispose E-waste in scientific manner.

3.0 CONCLUSION

Green and environment audit is the powerful tool to identify the strength and weakness of college in environment area.

This audit is one kind of scientific and professional approach towards accountability in utilization of resources. Green audit is helpful to the college for the identifying, evaluating and managing environmental risks and improvement in waste management, energy, water management etc.

Output of the green audit report in each area will be serve as a guide for educating the college community on the environment related practices and resource usage at the college as well as new activities and innovative practices.