

GREEN/ SAFETY/ENERGY AUDIT



AT SITE

(Kokan Education society's)

Anandibai Pradhan Science College,

Nagothane, Tal. Roha, Dist. Raigad, Maharashtra-402 106

MAR- 2023

Prepared By:

Mr. Bhagwan S. Nagargoje

Green Audit Report of KES Anandibai Pradhan Science College, Nagothane, Tq. Roha. Dist. Raigad has been prepared by Syba tech (Mr. Bhagwan Nagargoje) based on review of findings of internal green & environmental safety & energy audits conducted by College, desktop review of documents/ records, virtual tour of the College campus and telephonic interviews of faculty, non-teaching staff & students.

The audit was conducted in **MARCH 2023**.

The Green, safety & energy Audit Report also presents green initiatives followed and taken up by the College and provides suggestions and recommendations to improve environmental sustainability.



Date of Audit: - 29/03/2023

Anandibai Pradhan Science College,

(Konkan Education society)

Nagothane, Tal. Roha, Dist. Raigad, Maharashtra-402 106

Important Note: The report cannot be copied or shared without prior written permission



▶ Audit Certificate

This is to certify that
of
Anandibai Pradhan Science college,,
At
Nagothane tq. Roha Dist. Raigaod(Maharashtra)402106.
(kokan Education Society's)
has successfully undergone Green, Energy & safety Audit
During
In Month of March 2023
under
the supervision of the Safety auditor and team.
And college credited
with
Remark: Very Good

M/S. SYBA TECH
MR. BHAGWAN S. NAGARGOJE

GOVT RECOGNIZED SAFETY AUDITOR
TECHNICAL EXPERTS AND CONSULTANT .

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1. Introduction

K.E.S. Anandibai Pradhan Science College, Nagothane, Tq. Roha. Dist. Raigad. In the Bapusaheb Deshpande Educational complex, Nagothane was inaugurated on 21st March 1992 at the hands of shri shankar dayal sharma , then the vice president of india. Shir. Ram Pradhan former governer of Arunachal Pradesh, former secretary of central government and former Chief secretary of Maharashtra state is one of the main patrons of this college. Late shri. Bapusaheb Deshpande is the founder of this college.

Recently the college is Re-accredited by national assessment and accreditation council (NAAC) Bangalore for the 3rd cycle by B+ Grade with CGPA-2.68 The konkan education society and the Anandibai Pradhan science college has reached the this stage of excellence under the dynamic leadership of late Honorable Adv. Datta patil who was the president of the society since 1977. Adv. Datta patil was also the former leader of opposition of Maharashtra state and recipient of most prestigious' Savitribai phule and Fatima shekh award for his contribution in the field of education from shikshak Bharati.

Now Shri Sanjay Datta patil is shouldering the responsibility as president of konkan Education society.along with Adv. Sidharth Sanjay Patil as secretary of the society.

To enable our student to be competitive in 21st century, it becomes impetrative to provide education about computers and information technology, right from the school level.

The college is recognized by UGC Under I2(B) & 2(f) and we are getting the UGC grant in aid for college development. The college is recommended by Department of science & technology, Govt of india for first programme for development of infrastructure for research. Dr. Sandesh S. Gurav has received a Dr. A.P.J Abdul kalam life time achievements national award for the remarkable achievements in teaching, Research & publication on 24th feb 2018 from the international institute for economic & social reforms, Bangalore. College has PG in Organic Chemistry and has funded grant by DST FIST of '0' level grant.

College has 537 students enrolled in various Academic, Professional and Research Programs. It is affiliated to University of Mumbai. It has faculty members more than 40 teaching & non-teaching staff.

The College comprises various departments offering post graduate and undergraduate programmes. College offers various courses listed below:

Undergraduate Courses

BSc. Chemistry
BSc. Computer Science
BSc. Information Technology

Postgraduate Courses

MSC (Organic chemistry)

Remedial Classes

Computer Skills and Information Technology
English/Communication Skills

1.1 Environmental Setting

The college is spread over 5.0 acres which includes about 1 acre sports ground and 1 acre green area. College is easily accessible by road and nearest Railway station is which is 900 m away. CST Airport is 65 km away from the College.

Although campus is located in residential area, presence of green belt including gardens, lawns and an herbal garden has considerably reduced noise pollution in the campus. College building area has an academic building,

1.2 Basis of Green Audit and Stakeholders Consultation

Green Audit enables to:

- Enhance awareness levels on environment management and sustainability.
- Prepare an environment management plan and promote sustainability through efficient resource management resulting in cost reduction.
- Benchmarking process in terms of resource utilization.
- Develop outreach programs in environment management and Sustainability

Syba tech Representative Mr. Bhagwan S. Nagargoje(Govt Recognised Safety Auditor) & team conducted Green Audit of Anandibai Pradhan Science College, Nagothane in MARCH 2023 through desktop review of findings of internal green & environmental safety audits conducted by College, review of documents/ records and virtual tour of the College and telephonic interviews of faculty, non-teaching staff and students. Prior to audit, questionnaire and checklists were prepared. Virtual tour of the campus included College building and infrastructure facilities such as solar system, Rainwater Harvesting System (RWH), Reverse Osmosis (RO) system, gardens etc. List of stakeholders interviewed is presented in **Annexure 1**.

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.

1.3 Campus Information

College campus consists of two buildings, both are in operational.

College building has classrooms, well-equipped laboratories, a library and an auditorium. College Sports ground has indoor and outdoor games facilities. There are two gardens in the campus including an herbal garden. The area details of the College building is presented in **Table 1**.

Table 1: Facilities Details

Floor	Facilities
Building -I Ground floor	2 Chemistry laboratories, computer laboratories, 5 classrooms, 2 small classrooms, canteen, girls common room, Principal's office, staff room, administrative office, 2 washrooms
Building -I First floor	2 Physics laboratories, 2 computer laboratories, staff room, 10 classrooms, auditorium, 2 washrooms, Library
Building -II Second floor	10 classrooms, zoology laboratory, 2 washrooms
Building -II Second Building	10 classrooms, 2 washrooms
Terrace	Open Area.

2. Green Audit Findings

For Green Audit following major areas (including their sub-sections) were covered and compliance/ initiatives under these areas were verified/ validated,

- a) Good Daylight Design and Ventilation
- b) Water Efficiency
- c) Wastewater Management
- d) Indoor Air Quality
- e) Energy Management
- f) On-site Energy Generation
- g) Solid Waste Management
- h) Universal Access and Efficient Operation and Maintenance of Building
- i) Transportation
- j) Green Belt
- k) Green Programs (Green initiatives)

2.1 Good Daylight Design and Ventilation

- a) Classrooms, laboratories, offices, library etc. have high ceiling, wide doors and large windows.
- b) Building is designed in such a way that corridors and classrooms receive ample sunlight. Curtains are provided for laboratory windows to avoid glare. Natural light in the classrooms was about 70-85 lux.
- c) Ventilation in classrooms is facilitated by windows and fans. Cross ventilation is facilitated due to large windows on both sides of some classrooms. Air conditioners are used in offices, computer laboratories and computer server rooms.
- d) Exhaust fans are provided in washrooms, chemistry, Computer and I.T. laboratories.

2.2 Water Efficiency

- a) Major water source for College is tap water supplied by Local Gram panchayat. water management team, daily water consumption for the entire campus when in full operation is 5 KL, which includes 2 KL consumption in academic area and 1 KL for gardening. Water collected in rainwater harvesting pits is used for gardening. As per IS 1172 standards for non-residential institutions, water consumption should be maximum 15 L/person/day. Water consumption of the College works out to be 6.3 L/person/day, which is well under limit.
- b) As per the water bill dated available for review, water consumption from November 2022 to Feb 23 college is non-functioning/ partially functioning as per COVID- 19 regulations imposed by Maharashtra Government.
- c) Water is stored in the underground storage tank of capacity 5 KL, and then transferred to 02 overhead tanks of total capacity 2 KL using 1 HP pump and then distributed to washrooms, basins, laboratories and water purifiers/ coolers installed in the College building.
- d) Additionally, 1 tanks of 5 KL capacity each are installed in the campus to provide inlet water to 1 KL/ day RO system. Water from RO is sent to drinking water unit provided near main gate. RO system is operated by College water management team and maintenance is done by third party contractor appointed by College. Maintenance is done Quaterely. The water distribution diagram is presented in **Annexure 2**.
- e) RWH system, comprised of rooftop and surface runoff, is provided in the campus. Through RWH, rain water collected is used for recharging ground water through 2 recharge bores. Rain water collected is also stored in recharge pits which is used for gardening.
- f) 4 water coolers fitted with RO purifiers are provided in College building as a source of safe drinking water. Third party contractor is appointed by the College for their maintenance.
- g) Restrooms and canteen are water intensive areas. Water conservation faucets (non-concussive taps, aerator taps) are fitted in some washrooms. Dual flushing systems are not provided in the washrooms.
- h) Dry and wet mopping is practiced for floor cleaning. Floors are mopped once a day. College has appointed peon for cleaning.
- i) As informed by College's water management team, tap water leakage is immediately attended to by the maintenance department.
- j) Signage on water conservation were not seen in washrooms or near water purifiers.
- k) Sprinkler system is provided in all gardens which leads to water conservation.

Table 2: Requirements for Educational Institutions

Filaments	Educational Institutions (Non- residential)	
	For boys	For girls
Water closets	1 per 40 students	1 per 25 students
Ablution taps	1 in each water-closet	1 in each water-closet
	1 water tap with draining arrangement/ 50 students	
Urinals	1 per 20 students	
Wash basins	1 per 60 students, minimum 2	1 per 40 students, minimum 2
Baths	-	-
Drinking water fountains or taps	1 per 50 students	1 per 50 students
Cleaner's sinks	1 per floor, minimum	

2.3 Wastewater Management

- a) Waste water is mainly generated from washing, toilet flushing, canteen kitchen and laboratories. Total 8 washrooms are provided in the College building (2 washrooms on each floor).
- b) Currently, sanitary wastewater generated is sent to municipal sewer line. STP will comprise of primary and secondary treatment (biological treatment) followed by filtration.

2.4 Indoor Air Quality

Indoor Air Quality (IAQ) refers to the air quality within & around buildings and structures, it relates to the health and comfort of building occupants. Common indoor pollutants are listed as below:

- Carbon monoxide – Sources of carbon monoxide are incomplete combustion of fossil fuels
 - Volatile organic compounds (VOCs) – VOCs are emitted by paints and lacquers, paint strippers, pesticides, office equipment such as copiers and printers, correction fluids and carbonless copy paper, graphics and craft materials including glues and adhesives, permanent markers, and photographic solutions etc.
 - Carbon dioxide – Due to human respiration
 - Particulate matter – Due to construction and maintenance activities, vehicular pollution
 - Nitrogen Oxides- Due to vehicular pollution
- a) Science laboratories and kitchen in the canteen use liquefied petroleum gas (LPG), a clean fuel.
 - b) In classrooms, the mode of ventilation is natural draft (through windows) and is enhanced by fans. Large windows and cross-ventilation are observed in corridors. Air conditioners are used in some offices and computer laboratories. ACs are serviced regularly to ensure indoor air quality.
 - c) Science laboratories are provided with exhaust fans so that the fumes are safely discharged outside the building.
 - d) Green belts have been set up in the campus area.

2.5 Energy Efficiency

Electricity:

- a) Common electricity meter is provided for the entire campus. Electricity is provided by Bombay Sub urban Electric Supply. Electricity bills of last months Jan-2023, were available for review (average consumption 1000 units/ month). Latest bills were not available for review. In the absence of latest electricity bill, it is difficult to comment on electricity consumption. The areas of major consumption of electricity are:

Tube Lights & LEDs	100+ (30% LEDs)
Fans (ceiling fans & wall fans)	50
Air Conditioners	07
Computers (desktops & laptops)	62
Projectors	10
Water purifiers	02
RO system of 1 KLD	02

- b) Conventional tube lights, LEDs & fans are installed in classrooms, laboratories and library. For efficient energy consumption and saving on electric bill, College has initiated the process of replacing incandescent bulbs and tube lights with LEDs.
- c) College has 07 air conditioners with two/ three/five -star ratings [Standards set by Bureau of Energy Efficiency (BEE)].
- d) An Uninterruptible Power Supply (UPS) system is provided in computer laboratories for computers and servers. The UPS system is typically used to protect hardware viz. computers, data centres, telecommunication equipment or other electrical equipment when an unexpected power disruption could cause serious work disruption or data loss.
- e) Reflectors are not provided for lights in the library and auditorium. Reflectors can reduce the number of lights required and hence electricity consumption.
- f) All computers have LED screens; computers are shut down by turning off the main switch when not in use.
- g) Common switches are provided for some tube-lights & fans. To avoid wastage of energy due to common area illumination, it is recommended to have separate switches.

Tube-lights and fans are switched off by students and staff when not in use. Instructions regarding switching off the electrical appliance were seen in laboratory notice boards. However, signage are not provided near electrical switch boards. Signage can encourage & help users to switch off lights and fans to save electricity.

2.6 On-Site Energy Generation (Usage of LPG)

- a) LPG cylinders are used mainly in canteen kitchen for cooking and in chemistry, botany, and zoology laboratories. Inventory of cylinders usage was not available for review. 1 cylinder of 19 kg generates 881.6 MJ (Mega Joules) of energy.
- b) Storage facility for LPG cylinder is located on ground floor. All the commercial LPG gas cylinders were in vertical position with access control; however it is necessary to provide extra support system like chain in order to prevent cylinders from falling, movement or physical damage.
- c) Campus has a diesel generator (DG) of capacity 10 KVA. DG set is used only in case of emergency when there is power cut-off. DG emissions are not monitored.

2.7 Solid Waste Management

Solid waste generated from campus includes mainly paper waste, wet (food/ organic) waste and E-waste.

- a) Blue and Green covered/ pedal-pushed dustbins are placed in the premises. Waste bins are provided on each floor, in staff rooms, laboratories, washrooms, in campus area.
- b) Daily around 5-10 kg organic/ bio-degradable waste is generated in the campus which includes horticultural waste. Quantity of horticulture waste varies significantly due to seasonal variation,

A) Paper Waste Management

Being an academic institution, waste paper is one of the main solid wastes generated in the premises. College has taken steps to minimize and avoid paper usage.

- a) Prints and photocopies are taken on both sides of the paper to avoid excess paper usage. Rather than photocopy, digitalization (scanning) is practiced.
- b) College has two floor library with 8913+ books; journals, magazines, newspapers are also available in the library. Library has an e-book facility having 3000+ e-journals, and 85000+ e-books available online through different portals such as INFLIBNET, National Digital Library. Two computer rooms are provided in the library to access online services.
- c) Internal notices and communications are through e-mail/ SMS. College has a Learning Management System (LMS) where notices are sent, exam results are displayed and attendance is recorded digitally.
- d) Display Screen is provided on ground floor where notices are displayed digitally.
- e) paper waste is sent to local vendor for recycling. The dissertation reports, journals and answer papers are stored as per the University rules.

B) E- Waste Management

E- waste is broadly comprised of discarded computer monitors, motherboards, mobile phones and chargers, compact discs, headphones, Printed Circuit Boards (PCB), televisions etc.

- a) College is digitized to a large extent. This includes classrooms, library for academic work etc.
- b) College has 62 computers, 10 projectors, 07 air conditioners in working condition.
- c) E- waste is collected & stored in college campus and sent to authorized vendor for recycling/ disposal under buy-back policy.

C) Plastic Waste

- a) College strictly follows the guidelines regarding plastic usage and has prohibited the use of single use plastic e.g. carry-bags, glasses, spoons etc., in the campus.
- b) As per the College guidelines, Canteen Contractor is prohibited to use plastic cutlery, instead paper plates and wooden spoons are used.

2.8 Universal Access and Efficient Operation and Maintenance of Building

- a) Campus is easily accessible by Rail and bus services.
- b) Staircases and classrooms have wide windows, which can allow safe evacuation during emergency. Handrails are provided on all staircases.
- c) Total 22 fire extinguishers are installed in the corridors of all floors, laboratories and kitchen area. They are maintained and serviced regularly by Authorized agency'. Fire extinguishers present in the building were found within expiry limit when checked randomly.
- d) Sand buckets are also provided on each floor for firefighting purpose. Total 05 sand buckets are installed in the building.
- e) There were no signage for emergency fire exit. This is crucial during emergency.
- f) First aid boxes are maintained in various science laboratories.
- g) University has prepared detailed emergency response plan for disaster management for natural calamities like earthquake, thunderstorm and other hazards such as fire, structural collapse, food poisoning, chemical spill. E.g. Mock drill on earthquake preparedness (Jointly organized by District Disaster Management Authority , Tq. Roha. Dist. Raigad) and Road safety week. The actions and roles & responsibilities are clearly identified in the emergency response plan.

2.9 Transportation

- a) The location of College is quite enviable with Rail way station and bus service in close vicinity. Most of the staff pool cars and few staff members travel by private vehicles.
- b) College has vehicle-free campus. Dedicated area for parking has been allotted on the sports ground; vehicle movement and parking in the main campus is prohibited.
- c) College management encourages students and staff to use the Railway or public transport system to reduce carbon emissions.

2.10 Green Belt/ Landscaping

- a) College campus has 2 gardens (including rock garden and rose garden) and an herbal garden. College has 1.83 acre green belt area, having 100 varieties of plants (including 25 tree species), 127 trees, shrubs and 200-300 potted plants. List of few plants present in the campus is given in **Annexure 3**. Plantation improves aesthetics and helps as a buffer in reducing noise level, maintaining temperature of the area. Herbal garden has different sections in which specific types of plants planted with respect to their medicinal importance.
- b) As per the findings of internal green audit conducted by College, large trees include Peepal (*Ficus religiosa*), Goolar (*Ficus racemose*), Pilkhan (*Ficus virens*), Ashok (*Saraca asoca*), Jamun (*Syzygium cumini*), Mango (*Mangifera indica*), Kadamb (*Neolamarckia cadamba*), Bael (*Aegle marmelos*), Gulmohar (*Delonix regia*), Champa (*Magnolia champaca*), Kanak Champa (*Pterospermum acerifolium*), Semal (*Bombax ceiba*) and Neem (*Azadirachta indica*) etc. Few trees were identified and confirmed during virtual tour.
- c) Fruit bearing trees attract variety of insects like wasps, bees, ants and beetles thus increasing the biodiversity. Various field-based projects were assigned to students studying Environmental Science Course to assess the birds and butterflies in College Campus. Student survey showed that the campus has total of 19 different bird species and 6 butterfly species. The different tree species provide habitat to variety of bird species. List of bird and butterfly species is presented in **Annexure 4**
- d) College has indoor plants in the building. Indoor plants have aesthetic appearance as well as health benefits. List of few indoor plants which can be potted and their benefits are presented in **Annexure 5**.
- e) Gardens are managed by 2 staff members. Organic fertilizers and pesticides are used for plants if necessary.

2.11 Green Initiatives

Due to minimum consideration for environment & sustainability, the world is facing problems of ozone depletion, climate change, water scarcity and sustainable resource management. College organizes guest lectures on environmental conservation, biodiversity etc. every year.

College has demonstrated consistent commitment towards nature and environment for the last 6 years. College has the Garden Committee which offers wide spectrum of environmental and nature activities and platforms to enhance awareness and exhibit the relationship with nature. The National Service Scheme (NSS) of the college undertakes projects for environment, rural development, education awareness, healthcare, etc. Various activities like cleanliness drive, tree-plantation, seminars and workshops are organised by Garden Committee/ NSS increase the awareness and sensitivity among students and faculty.

In the current scenario when academic activities are taking place virtually, College arranges webinars, online conferences pertaining to environment. in research and innovative activities on ecological concerns and issues. Students also participate in Records of all activities are being maintained by the College which were available for review.

Awards/ Recognitions received by faculty and students :

Sr.No.	Name of faculty	Name of award	year
1	Dr. S. S. Gurav	Best Principal Award – State level– by Maharashtra state Higher and Technical Department and Maharashtra state T Assistance Centre -	2022
		Best State level district college award under CareerKatta – by Maharashtra state Higher and Technical Department and Maharashtra state T Assistance Centre -	2023
		Best district level college award under Career Katta –by Maharashtra state Higher and Technical Department and Maharashtra state T Assistance Centre	2023
2	Dr. D. V. Bhagat	Best paper presentation award at Internationalconference	2020
		National global teacher’s award	2022
		District Coordinator Avishkar Research Conventionnominated by University of Mumbai	2018 onwards
3	Dr. S. D. Patil	Dr. APJ Abdul kalam life time achievement NationalAward	2018
		Best Educationist Award	2019
		Best Faculty Research award	2022
	Dr. S. D. Tupare	Best NSS Area coordinator	2019

4		Best National Award	2021
5	Dr. V.R. Jadhavar	9th Science and Technology Awards	2020
		GlobalTeacherAward	2020
		Best Taluka coordinator award under Career Katta – by Maharashtra state Higher and Technical Department and Maharashtra state T Assistance Centre	2023
		Best College coordinator award under Career Katta – by Maharashtra state Higher and Technical Department and Maharashtra state T Assistance Centre	2023
6	Dr. M. D. Shirsath	Rashtriya shikshak vaibhav purskar	2022

Green Initiatives & Awareness Activities by Anandibai Pradhan Science College, Nagothane (2020- 2023)

Name of the activity	Organising unit/ agency/ collaborating agency	Name of the scheme	Year of the activity	Number of students participated in such activities
Celebration of birth anniversary of National hero	NSS	Lokmanya Tilak Jayanti, Chhatrapati Shivaji Maharaj Jayanti, Dr. Babasaheb Ambedkar Jayanti & Jayanti of Anna Bhau Sathe programme etc.,	2020-21	28
Social Activity	NSS & Civil Hospital, Alibag, Raigad	Blood Donation	2020-21	76
	NSS	Distribution of food material, Cloths of Rs.5000/- to needy people	2020-21	35
	NSS	Celebration of Teacher's Day by NSS students	2020-21	32
	NSS	NSS Orientation Programme by Prof. T.P. Mokal, District Coordinator	2020-21	120
	NSS	Disaster Management	2020-21	45
	University of Mumbai	Poster competition on organ donation	2020-21	50
	University of Mumbai	Organ Donation Programme	2020-21	122

	Collector Office, Talathi office	Voter's awareness campaign	2020-21	65
	IQAC & WDC	Online Webinar on- Hindu Marriage Act- the current scenario	2020-21	29
	Z.P. Raigad	Swachha Bharat	2020-21	117
	University of Mumbai	Constitution day	2020-21	35
	Govt. of India	National Integrity	2020-21	45
	College NSS Unit	Status of women in society	2020-21	67
	University of Mumbai	Road safety activities	2020-21	56
	University of Mumbai	Leadership camp	2020-21	46
Awareness on COVID-19	IQAC & WDC	Online Webinar on-Health advice with refernce to post covid -19	2020-21	83
	NSS	Distribution of N-95 Masks to Non-teaching staff of the College.	2020-21	13
	NSS	Organization of Awareness Program on "Standard Precaution & Safety Measures to Control Coronavirus disease 2019 (COVID-19)"	2020-21	82
	NSS	"Check-up of Oxygen level & Pulse rate of all Staff" on the occasion of 'World Health Day',	2020-21	27
	NSS	Downloading ArogyaSetu app by NSS students	2020-21	250
	NSS	Distribution of 300 masks Adivasiwadi Bensewadi	2020-21	30

Conservation of Environment	NSS	Tree Plantation	2020-21	32
	NSS	Tree Plantation by NSS students at home/Garden	2020-21	46
			2020-21	
Skill development Programme	IQAC & WDC	Online self employment skill development program- .Bag and Purse making	2020-21	26
			Total	1557

Name of the activity	Organising unit/ agency/ collaborating agency	Name of the scheme	Year of the activity	Number of students participated in such activities
Poster exhibition	College IQAC	NSS	13-07-2021	250
Tree plantation	NSS, Uni. Of Mumbai	NSS	18-07-2021	450
Mahad Flood Help	NSS, Uni. Of Mumbai	NSS	30-07-2021	50
Mazi Vasundhara Drive	Maharashtra Govt.	NSS	10-08-2021	85
Online Webinar on-Importance of Education-by Mrs. Kirti S. Mulye,Indor	College IQAC	WDC	24-08-2021	50
Teachers Day Celebration	College	NSS	05-09-2021	76
Cleanliness drive vidio competition	Neharu Yuva Kendra	NSS	24-09-2021	10
Antiplastic Awarness lecture	Z. P. Alibag	NSS	02-10-2021	76
Vaccination Drive	Civil Hospital, Nagothane	NSS	12-10-2021	125
Vaccination Drive	Civil Hospital, Nagothane	NSS	26-10-2021	125
Quiz competition	HIV-AIDS Control board, Raigad	NSS	29-10-2021	2

Online Webinar on- Beautiful flower making – Art & Craft program to learn self employment skills Mrs Neena S. Begumpure, Pune	College IQAC	WDC	08-11-2021	50
Leadership camp	NSS, uni. Of Mumbai	NSS	21-11-2021	2
Constitution Day	College IQAC	NSS	26-11-2021	35
Careers in Banking & Financial Services Industry Overview	College IQAC	Career Guidance and Placement Cell	26-11-2021	41
Classical Dancing	College IQAC	Cultural Committee	28-11-2021	2
Rangoli Competition	College IQAC	Cultural Committee	28-11-2021	20
Music Competition in instrument	College IQAC	Cultural Committee	28-11-2021	2
HIV-AIDs Awareness Programme	Reliance Industries	NSS	03-12-2021	110
KES Foundation Day	KES, Sankul	NSS	18-12-2021	300
Elocution competition	Dr. C. D. Deshmukh	Cultural Committee	13-01-2022	2
Youth Festival	DSW, Uni. Of Mumbai	Cultural Committee	14-01-2022	4
Voters Day Awareness Programme	Tahashil Karyalay, Roha	NSS	25-01-2022	450
Yoga and Suryanamskar	State Government	NSS & Sports Dept.	10-02-2022	56
Lecture on post- independence progress in indian Education	College IQAC	NSS	10-02-2022	56
Poem Reading	College IQAC	Cultural Committee	14-02-2022	150
Celebration of Chhtrapati Shivaji Maharaj Jayanti	College IQAC	NSS	19-02-2022	50
Blood Group Checking Camp	Civil Hospital, Nagothane	NSS	22-02-2022	30
Boold donation Camp	Civil Hospital, Alibag	NSS	24-02-2022	40
Savitribai Phule Jayanti	Reliance Industries	NSS & WDC	01-03-2022	200
Celebration of International women's day- Online Webinar on-Laws of women's Safety by Adv .Mrs Sonal J. Jain	College IQAC	WDC	08-03-2022	20

Celebration of International women's day- Poster presentation ,speeches	College IQAC	WDC	09-03-2022	25
Inauguration of Career Katta.	Maharashtra State Higher & Technical Education Department and Maharashtra Information Technical Support Center	Career Guidance and Placement Cell	07-01-2022	25
Workshop on Job opprtunities in Central Board of Indirect taxes	College IQAC	Career Guidance and Placement Cell	11-04-2022	65
Celebration of birth Anniversary of Mahtma Jyotiba Phule and Dr. Babasaheb Ambedkar	College IQAC	NSS	11-04-2022	45
Avishkar Participation	University	Science Association	2021-22	8

Sr no	Name of program	Resource person	Date	Information
1	Online Webinar on- <i>Health Advice with reference to the Post Covid – 19 situation</i>	Dr. Lakshmi Bharathi, Reliance Industries Limited, Nagothane	12 th Feb 2021	Health awareness program
2	Online Webinar on- <i>Hindu Marriage Act – The Current Scenario</i>	Adv. (Mrs). Sonal J. Jain, Nagothane	9 th March, 2021	Law Knowledge program
3	Online self-employment skill development program-. 'Bag and Purses making	Mrs. Manali Sahastrabudhdhe, Classic Bag makers, Nagothane	1 st April , 2021	Bag & Purses making skill development program
Sr no	Name of program	Resource person	Date	Information
1	Online Webinar on- Beautiful flower making – Art & Craft program to learn self-employment skills	Mrs. Neena S. Begumpure, Pune	11/8/2021	Art & Craft program to learn self-employment skills
2	Online Webinar on- <i>Importance of Education</i>	Mrs. Kirti S. Mulye, Indore	24 /8/2021	Gender equality program & to enhance awareness of education
3	Online celebration of HIV-AIDS Day	Dr. Laxmibharti, IPCL, Nagothane	3/12/2021	Medical knowledge
4	Online Webinar on- <i>Laws of women's Safety- Celebration of international women'</i>	Adv. (Mrs). Sonal J. Jain Nagothane	8/03/2022	Knowledge empowerment program
5	Balika Din Celebration	In KES. Late Amarchand Jethmal Jain Primary school, Nagothane	3/01/ 2022	Distribution of educational things to girl students in school.
6	Poster presentation, speeches- Celebration of international women's Day	Dr Sandesh. S. Gurav	9/3/2022	Women empowerment

Activity Name	Date	Resource person	Beneficiaries
Health workshop	16/7/2022	Dr Heeba Dafedar	100girls
Distribution of school materials	12/7/2022	Late G.R.Agrawal School	75 student
QR Code Poster inauguration	10/7/2022	by Shri SahanePSI , Wakan region	80 students
Rangoli compitition	12/7/2022	PSI Mrs. Jyoti Taware ,NagothanePolice station	90 students
Informative lecture on socialawareness	3/12/2022	Mrs. Arti Naik, Panvel, member Aniscommittee	100 students
Self employment Workshop	18/12/2022	Mrs Surekha (Shilpa) Nikam	40 students
Savitribai PhuleJayanti	3/1/2023	Dr S.S. Gurav	25 students

Date	Organised by/ for	Activity Details
2020		
8 th Jan.2020	IQAC and Carrier guidance & placement cell Total 95 students from F.Y./S.Y./T.Y.B. Sc. classes 20 students had filled the examination forms for the different exams.	A seminar on “Competitive Examinations-Preparation of Preliminary Examinations of Staff selection commission exam, Banking, M.P.S.C./U.P.S.C., Filling of exam forms etc.”
11 th Mar.2020	IQAC and Carrier guidance & placement cell Total 25 students from T.Y.B.Sc. I.T.class	A seminar on “Career opportunities after graduation”
2021		
12 th Mar. 2021	IQAC and Carrier guidance & placement Total 88 students from T.Y.B.Sc. class	A Webinar on <u>CAREER OPPORTUNITIES AFTER B.Sc.</u>
23 rd April 2021	IQAC and Carrier guidance & placement Total 53 students from T. Y. B.Sc. and M.Sc. classes	<u>Online Workshop on Job Opportunities in Central Government & Indira Gandhi Centre of Atomic Research for Science Students.</u>
26 th Nov.2021	IQAC and Carrier guidance & placement Total 41 students from all classes	A Webinar on I. Careers in Banking & Financial Services Industry and II. Banking and Financial Service Industry overview.

23 rd Dec.2021	IQAC and Carrier guidance & placement Total 128 participants were present for this online workshop.	One Day Online National Workshop on “INTELLECTUAL PROPERTY RIGHTS (IPR) AND PATENTS”.
2022		
07 th Jan. 2022	IQAC and Carrier guidance & placement cell 20 Students and 10 staff members were present.	Inauguration of Career Katta program , by Dept of Higher Education and Maharashtra Information Technical Support Centre.
11 th April 2022	IQAC and Carrier guidance & placement cell Total 61 students from different classes were present.	Workshop on Job Opportunities in Central Board of Indirect Taxes & Custom & Central Beauru of Narcotics.
22 nd July 2022	IQAC and Carrier guidance & placement cell T.Y.B.Sc. 52 Students	A Lecture on Bee Keeping
26 th July 2022	IQAC and Carrier guidance & placement cell F.Y./S.Y. & T.Y.B.Sc. Trgular, I.T. and C.S. 89 Students	A Workshop on Career Opportunities after Graduation.
26 th July. 2022	IQAC and Carrier guidance & placement cell H.Sc.38 Students	A Workshop on Career Opportunities after 12th Standard.
30 th Sept. 2022	IQAC and Carrier guidance & placement cell S.Y. & T.Y.B.Sc. Regular 60 Students	A seminar on Awareness about Labor, Taxation and Cyber Law
12 th Oct. 2022	IQAC and Carrier guidance & placement cell M.Sc. Part-I and Part-II 45 Students	A seminar on Career opportunities in Meteorological Department of India and Staff Selection Exams.
07 th Jan. 2022	IQAC and Carrier guidance & placement cell 20 Students and 10 staff members were present.	Inauguration of Career Katta program , by Dept of Higher Education and Maharashtra Information Technical Support Centre.
11 th April 2022	IQAC and Carrier guidance & placement cell Total 61 students from different classes were present.	Workshop on Job Opportunities in Central Board of Indirect Taxes & Custom & Central Beauru of Narcotics.
22 nd July 2022	IQAC and Carrier guidance & placement cell T.Y.B.Sc. 52 Students	A Lecture on Bee Keeping
26 th July 2022	IQAC and Carrier guidance & placement cell F.Y./S.Y. & T.Y.B.Sc. Trgular, I.T. and	A Workshop on Career Opportunities after Graduation.

	C.S.89 Students	
26 th July. 2022	IQAC and Carrier guidance & placement cell H.Sc. 38 Students	A Workshop on Career Opportunities after 12th Standard.
30 th Sept. 2022	IQAC and Carrier guidance & placement cell S.Y. & T.Y.B.Sc. Regular 60 Students	A seminar on Awareness about Labor, Taxation and Cyber Law
12 th Oct.2022	IQAC and Carrier guidance & placement cell M.Sc. Part-I and Part-II 45 Students	A seminar on Career opportunities in Meteorological Department of India and Staff Selection Exams.
2023		
20 th Jan, 2023	IQAC and Carrier guidance & placement cell Total 69 Students from T.Y B.Sc. Class	A talk on Chemical Laboratory Skills and Career opportunities for Chemistry Graduates o
21 st Jan, 2023	IQAC and Carrier guidance & placement cell Total 40 students from F.Y. and S.Y. B.Sc. Classes	A seminar on Job Opportunities in Central and State Government sector

3. Green steps taken by Anandibai Pradhan Science College, Nagothane

College campus was audited with respect to Green Audit Checklist developed by SYBA TECH (refer **Annexure 6**). Based on the data available for review, it is understood that since 6 years college is actively taking initiatives in environment related activities. College has taken green initiatives by installing a renewable energy system, rainwater harvesting system, vermicomposting, establishing a paper recycling unit, promoting eco-friendly activities etc.

- a) Buildings are specifically designed with wide windows and wide passages to utilize sunlight, and for ventilation.
- b) College has 200+ trees, shrubs and potted plants present in the campus.
- c) College has installed a rooftop solar PV system of 1 KVA capacity in December 2023.
- d) College has e-book facility in the library.
- e) For e-waste management, college has tied-up with E-waste recycler/ disposer.
- f) Understanding the importance of efficient energy use, college has initiated the process of replacing all incandescent lights with LEDs.
- g) College established 'Garden Committee' in which students and staff arrange different environmental activities such as guest lectures, conferences, cleanliness drives etc.
- h) Sewage treatment plant is under construction. Water treated in STP will be used for non-potable activities such as flushing, gardening, etc. in the campus.

4. Recommendations

- 1) College has implemented several green initiatives such as rainwater harvesting, vermicomposting, solar PV system and under process for installation sewage treatment which help in promoting sustainability. College should develop monitoring mechanism and generate & maintain the performance records of the green infrastructure.
- 2) Water consumption can be reduced further through various conservation methods. Replacement of all old water faucets with water saving faucets such as prismatic taps, aerator taps, jet sprays etc. can save water and help in minimizing the water footprint.
- 3) Treated sanitary wastewater can be recycled for toilet flushing by providing dual pumping system.
- 4) College should test water quality at regular intervals, develop water demand/ balance diagram and a plan delineating water conservation practice.
- 5) Records of pipe/ water taps leakage complaints should be maintained as a part of Standard Operating Procedures (SOPs).
- 6) Solid waste generated in campus includes paper waste, E-waste, plastic waste, food waste from canteens and dry recyclable waste from gardening. Paper waste and E-waste are given to approved agencies for recycle/ disposal. Inventories & management processes of all waste (including food and dry recyclable waste) should be well documented.
- 7) College can upgrade the waste segregation practices and segregated dry waste can be handed over to the aggregators appointed by the Municipal Corporation. A mechanism to be developed to segregate plastic in 7 categories viz. High-density Polyethylene (HDPE), Low Density Polyethylene (LDPE), PET, Polyvinyl Chloride (PVC), Polypropylene (PP), Polystyrene (PS) and Multi-layered plastic; and handing over to plastic waste segregator or the recyclers to enable circular economy in plastic waste management.
- 8) Signage regarding water conservation, reduction & segregation of plastic waste, reduction in food waste, waste segregation can be put up in kitchen, dining areas and near drinking water facilities to create awareness among staff and students.
- 9) Mirror optic reflectors can be retrofitted on existing tube lights as the reflectors can spread light to relatively large areas. Control sensors can help to reduce consumption by automatically dimming lights when people are not around.
- 10) Every classroom and laboratory with central switch board can have a diagram linking location of a tube light, fan etc. with corresponding switch. This will ensure that correct fitting is switched on/ off and can save time & unnecessary operation. The awareness regarding energy management could be improved by encouraging students to help in monitoring energy consumption and by integrating energy education into classroom learning.
- 11) College is procuring LED lights and electrical equipment with star ratings. SOPs should be prepared and followed for purchasing green equipment, equipment star rating and eco-friendly materials.
- 12) The installed solar energy system capacity could be expanded to the remaining roof top area to generate more renewable energy.

- 13) It is recommended that indoor air quality, noise levels and water quality to be monitored once in 6 month and records to be maintained as per IS: 10500.
- 14) Information on sources, impacts and mitigation of indoor air pollution to be displayed within campus for increasing awareness about indoor air pollution. E.g. Signage can be put in chemistry laboratory for handling fuming chemicals.
- 15) It is recommended to measure emissions from diesel generator and ambient air quality at least once a year.
- 16) Air quality, water quality, noise level monitoring within College campus can be included as short-term projects under course curricula. This will help the students to get first-hand experience in environmental monitoring and also help College to maintain records of the quality of important environmental attributes. Additional credits can be considered for students who are part of the project team.
- 17) There should be a schedule for safety training, fire-fighting drills and mock drills. Records of these activities should be maintained.
- 18) Fire hydrants and fire alarm systems can be installed in the College. Fire hydrant and alarm system can be commissioned after receiving the NOC.
- 19) Fire safety drills should be conducted at regular intervals and their records should be maintained.
- 20) Safety, Health and Environment (SHE) groups can be formed which will include staff members and students. They can have regular meetings, and suggestions to be recorded and implemented if found suitable.
- 21) Emergency escape route plans should be provided on each floor. Floor plan should be clearly visible with an emergency exit and assembly point.
- 22) Records of green and environmental initiatives conducted by College should be maintained properly which will include aim & objective of the initiative, details in brief and the outcome.
- 23) Fire Extinguisher shall be maintained properly by Authorized Agency with test certificate.
- 24) Fire extinguisher shall be located properly as per govt Norms.
- 25) College fencing shall be excuted / erected properly.
- 26) D.G. Set exhaust system shall be fitted properly.
- 27) Earthing records shall be maintained properly (Below 2 Ohms)
- 28) Lightening arrestor shall be fitted on college Each Building .
- 29) Under ground water storage tank Manhole shall be provided Lock system.
- 30) Drinking water coolers daily check list shall be maintained.

Annexure 1: List of Stakeholders Interviewed

Stakeholders interviewed during the audit

Virtual tour of Anandibai Pradhan Science College, Nagothane was conducted . During the visit, College campus, College building (classrooms, laboratories, etc.), solar panels, rain water harvesting system, paper recycling unit, green belt, RO plant, LPG storage area were visited virtually. Following stakeholders were interviewed.

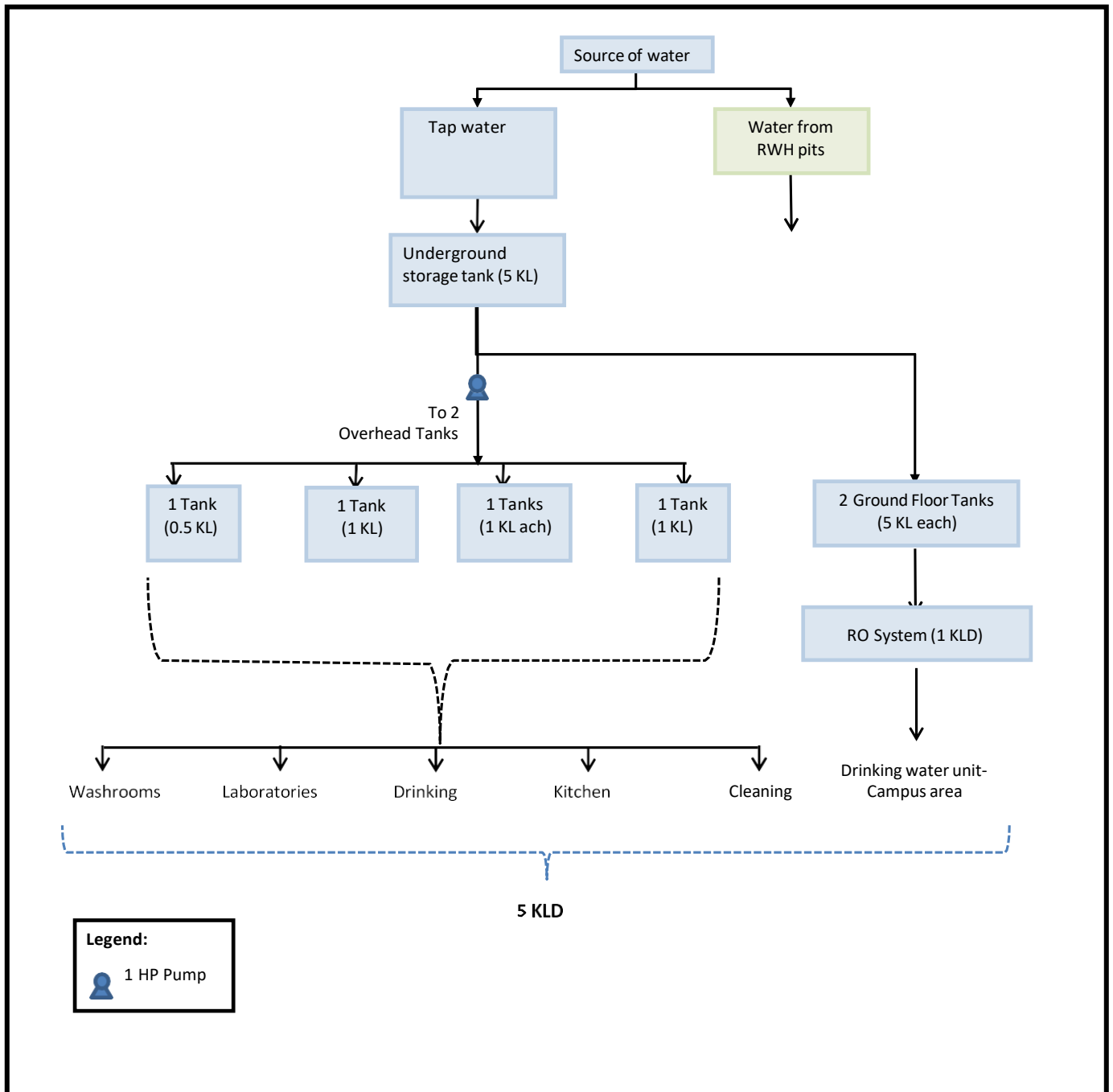
Sr. No.	Stakeholder Name	Designation
1	Dr. Sandesh s. Gurav	Principal
2	Prof. Dinesh V. Bhagat	HOD, Chemistry
3	Prof. S.D. Patil	Prof in Chemistry
4	Dr. S.D. Tupare	Prof in Chemistry.
5	Dr. V.R. Jadhavar	Assist.Prof. in Chemistry.
6	Dr. V.S. Shinde	Assist. Prof in Physics
7	Dr. V.S.Chavan	Asso.Prof in Botony
8	Mr. Yatin Mhatre	Lecturer in Physics

Faculty, Non- teaching Staff & Students Interviewed Individually over Telephone

Sr. No.	Stakeholder Name	Designation, Department
1	MR. VIJAY CHAVARKAR	HEAD CLERK
2	MRS. JYOTI P. PATIL	HEAD CLERK
3	MR. VIKAS NARWADE	SR. CLERK
4	DR. D.K. TIVALEKAR	LAB ASST
5	MR. G.H. MENGAL	LAB ATTENDENT
6	MR. K.M. GHARAT	LAB ATTENDENT
7	MRS. V.N. DESHPANDE	LAB ATTENDENT
8	MR. R. R. PATIL	PEON
9	MR. R.C. JOSHI	PEON
10	MR. D.T. DABHADE	PEON

Annexure 2: Water Distribution Diagram

Major water source for College is tap water provided by Local Grampanchayat. Daily water consumption for the entire campus when in operation is 5 KL, which includes 3KL consumption in academic area (used for drinking, cleaning, washrooms, laboratories and kitchen) and 1KL for gardening. Water collected in rainwater harvesting pits is used for gardening purpose.



Annexure 3: List of Plant present in the Campus

College campus has 1 gardens and has 200 variety of plants (including 50 tree species), 250 trees, shrubs and 100-200 potted plants present in the campus area.

List of some plant species present in the campus is given below,

1. Silver Oak (*Grevillea robusta*)
2. Kanak Champa (*Pterospermum acerifolium*)
3. Red Gum (*Eucalyptus australensis*)
4. Neem (*Azadirachta indica*)
5. Lemon (*Citrus limon*)
6. Jamun (*Syzigium cumini*)
7. Saptaparni (*Alstonia scholaris*)
8. Gulmohur (*Delonix regia*)
9. Toot (*Morus alba*)
10. Ashok (*Polyalthia longifolia*)
11. Champa (*Plumeria rubra*)
12. Guava (*Psidium guajava*)
13. Amla (*Phyllanthus emblica*)
14. Chinese Lemon (*Citrus spp.*)
15. Kinow (*Citrus spp.*)
16. Pomegranate (*Punica granatum*)
17. Karanj (*Pongamia pinnata*)
18. Pilkhan (*Ficus virens*)
19. Bougainville (*Bougainville glabra*)
20. Copperpod (*Peltophorum pterocarpum*)
21. Babool (*Acacia nilotica*)
22. Shareefa (*Annona squamosa*)
23. Chikoo (*Manilkara zapota*)
24. Yellow Oleander (*Thevetia peruviana*)
25. Arjun (*Terminalia arjuna*)
26. Drumstick (*Moringa oleifera*)
27. Laurel Fig (*Ficus microcarpa*)

Annexure 4: List of Bird and Butterfly Species found in the Campus

List of bird species:






1. Black Kite (*Milvus migrans*)
2. Shikra (*Accipiter badius*)
3. Black rumped Flameback (*Dinopium benghalense*)
4. Indian Grey Hornbill (*Ocyceros birostris*)
5. Brown headed Barbet (*Megalaima zeylanica*)
6. Copper smith Barbet (*Megalaima haemacephala*)
7. Asian Koel (*Eudynamys scolopaceus*)
8. House Crow (*Corvus splendens*)
9. Blue Rock Pigeon (*Columba livia*)
10. Eurasian collared Dove (*Streptopelia decaocto*)
11. Rose ringed Parakeet (*Psittacula krameri*)
12. Jungle Babbler (*Turdoides striata*)
13. Common Myna (*Turdoides striata*)
14. Red vented Bulbul (*Pycnonotus cafer*)
15. Oriental Magpie Robin (*Copsychus saularis*)
16. Common Tailor Bird (*Orthotomus sutorius*)
17. Oriental white Eye (*Zosterops palpebrosus*)
18. Purple Sunbird (*Cinnyris asiaticus*)
19. House Sparrow (*Passer domesticus*)








List of butterfly species:

1. Indian cabbage White (*Pieris canidia*)
2. Lime Butterfly (*Papilio demoleus*)
3. Common Jay (*Graphium doson*)
4. Common Emigrant (*Catopsilia*)
5. Common Mormon (*Papilio polytes*)
6. Plain Tiger (*Danaus chrysippus*)

Annexure 5: Indoor Gardening Details

Indoor plants are commonly used for their aesthetic benefits but they also play a vital role in reducing airborne pollution. The right choice of plants can be an excellent way in improving indoor air quality and general health. Local landscape contractor can be contacted for supply and rotation of these plants.

Plants	VOC it removes	Indoor source of VOC's	Plant care
 <p style="text-align: center;">Aloe Vera</p>	<p style="text-align: center;">Formaldehyde, Trichloroethylene and Benzene</p>	<p style="text-align: center;">Chemical based cleaners and paints</p>	<p style="text-align: center;">Easy to grow with enough sunlight</p>
 <p style="text-align: center;">Bamboo Plant</p>	<p style="text-align: center;">Formaldehyde, Trichloroethylene and Benzene</p>	<p style="text-align: center;">Paints, Plastics, Wood products etc.</p>	<p style="text-align: center;">Thrives under low light conditions as well as easy to maintain</p>
 <p style="text-align: center;">Chinese Evergreen</p>	<p style="text-align: center;">Benzene</p>	<p style="text-align: center;">Paints</p>	<p style="text-align: center;">Low maintenance plant that prefers low light conditions.</p>
 <p style="text-align: center;">English Ivy</p>	<p style="text-align: center;">Formaldehyde, Benzene, Air borne fecal matter particles</p>	<p style="text-align: center;">Wood, Paper products, Air borne faecal – matter particles from pests</p>	<p style="text-align: center;">Easy to maintain</p>
 <p style="text-align: center;">Janet Craig</p>	<p style="text-align: center;">Formaldehyde, Benzene and Trichloroethylene</p>	<p style="text-align: center;">Paints, Plastics, Wood products etc.</p>	<p style="text-align: center;">Medium to low light tolerant plant. Requires little water for growth.</p>

 <p>Golden Pothos or Devils Ivy</p>	<p>Formaldehyde, Cleanses air</p>	<p>Exhaust fumes, carpeting materials, panelling and furniture products made with particle board</p>	<p>Extremely easy to maintain under low to bright light conditions. Fast growing and grows well under Fluorescent light.</p>
 <p>Mass Cane</p>	<p>Formaldehyde, benzene and trichloroethylene</p>	<p>Paints, Plastics, Wood products etc.</p>	<p>Medium to low light tolerant plant. Requires little water for growth.</p>
 <p>Snake plant</p>	<p>Formaldehyde and trichloroethylene</p>	<p>cooking fuels, wood products, facial tissues, personal care products and waxed papers</p>	<p>Drought resistant and Tolerates a variety Of light conditions. Hard to damage or kill.</p>
 <p>Peace Lily</p>	<p>Formaldehyde, benzene and trichloroethylene</p>	<p>Paints, Plastics, Wood products etc.</p>	<p>Relatively easy to maintain. Survives in low light conditions.</p>
 <p>Red-edged Dracaena</p>	<p>Formaldehyde and trichloroethylene</p>	<p>cooking fuels, wood products, facial tissues, personal care products and waxed papers</p>	<p>Drought resistant and Tolerates a variety of light conditions. Hard to damage or kill.</p>
 <p>Spider Plant</p>	<p>Formaldehyde, benzene, carbon monoxide and xylene</p>	<p>cooking fuels, wood products, Printing</p>	<p>Easy to maintain under medium to bright light condition.</p>
 <p>Parlor Palm</p>	<p>Purifies indoor air</p>	<p>-</p>	<p>Easy to maintain</p>

Annexure 6: Green Audit Checklist

College campus is audited with respect to Green Audit Checklist developed by SYBA TECH. College building is specifically designed with broad windows and wide passages to utilize sunlight and for ventilation. College has ample number of trees in the campus. Facilities such as rainwater harvesting system, rooftop solar PV systems are provided in the campus. STP is under progress.

Students and staff demonstrate consistent efforts in arranging environmental activities and actively participate in them.

Good Daylight Design

Sr. No.	Design Feature		Remarks (If any)
1	Wide corridors open to daylight	✓	
2	Broad doors and windows allowing Daylight	✓	
3	Building architecture which allows sunlight within buildings	✓	Specifically designed with broad windows and wide passages
4	Presence of Skylight/ Roof light	X	Large number of trees and herbal garden are present in the premises.
5	Enough natural illumination in classrooms/ seminar halls/ laboratories	✓	Wide windows provided for natural sunlight.
6	Ultraviolet (UV) filtering windows/ Use of exterior louvers or light coloured fabric or blinds for windows to control glare	✓	Light colored curtains or blinds used for laboratory windows
7	Operable/ openable windows	✓	
8	Use of glass as facilitator of natural light	✓	
9	Use of insulated and tinted glass to filter heat gain	✓	

Ventilation

Sr. No.	Design Feature		Remarks (If any)
1	Good ceiling height which allows internal air circulation	✓	Height- about 4 m
2	Self-movement ventilators in the roof	X	
3	Wide windows and doors for classrooms, laboratories, seminar halls	✓	
4	Wide corridors	✓	Width- 2- 2.5 m
5	Operable louvers	X	
6	Exhaust fans in kitchen/ toilets	✓	Exhaust fans are provided in laboratories, washrooms and kitchens.

Temperature and Acoustic Control

Sr. No.	Design Feature		Remarks(if any)
1	Roof design & type (Double/ False ceiling with plaster of paris etc.)	✓	All roofs are false ceiling made from plaster of Paris.
2	Sand stone cladding/ tiling outside the Walls	-	
3	Specially designed walls for temperature control, Sound noise barriers for windows/ walls	X	
4	Building construction allows diffused sunlight but not the heat. Specially designed glass walls/ windows with better U value/ factor depending upon climate conditions	✓	
5	Use of insulation material (e.g. autoclaved aerated blocks, hollow blocks, Thermocrete etc.)	X	
6	Use of water bodies/fountain to maintain temperature within building	X	
7	Climbing creepers on the walls	X	
8	Retrofitting the existing roofs with cool roof technology	-	
9	Use of landscaping as sound barrier	✓	Trees and shrubs are planted in the Campus. Indoor plants are also placed in the building.

Water Efficiency & Wastewater Management

Sr. No.	Measures		Remarks (If any)
1	RO based water purifiers for drinking Water	✓	
2	Aerators to water taps	✓	Limited. Present only in some Wash rooms.
3	Automatic toilet faucets	X	
4	Drip irrigation/ Sprinklers (for plant watering system)	✓	Sprinklers are provided in gardens.
5	Dual flush toilet with cistern	X	Dual flush is important for reducing water footprint.
6	Dry mopping/ cleaning methods adopted	✓	
7	Sewage treatment plant for sewage Recycle	X	STP Shall be provided.
8	Rainwater harvesting	✓	RWH is provided in the campus.
9	Regular maintenance for leakage free plumbing system	✓	Maintenance is done by Maintenance department.
10	Use of low flow/flow control water equipment or gadget	X	

11	Water free urinals (No flush urinals/ Zero flush urinals/ water less urinals/ air-based flushing system)	X	
12	Water balance diagram and water consumption monitoring at each consumption level	X	Water consumption monitoring at each level is essential to identify major water consumption areas.
13	Routine monitoring of water quality	X	
14	Awareness signs displayed for promoting water conservation	X	Water conservation signage to be displayed to create awareness among staff and students.

Energy Efficiency and On-site Energy Generation Mechanism

Sr. No.	Measures		Remarks (If any)
1	Maintaining correct lux levels (70-300 lux) to avoid excessive light	✓	The illumination (Lux) levels were adequate in most areas (70-115 lux sunlight). Lights are kept switched off when not required.
2	Computerized monitoring of electrical System	X	
3	On-site energy generation (Diesel generators, LPG)	✓	Diesel generator of capacity 20 KVA is provided. LPG is used in kitchen and laboratories.
4	Use of renewable energy (Solar, biogas)	✓	Rooftop solar PV system of 1 KWH capacity is installed.
5	Photocell occupancy sensor for automatic light control	X	
7	Regular maintenance of electrical System	✓	On-site maintenance department is present for regular maintenance.
8	Use of energy efficient equipment like VFDs, maximum star rated equipment.	✓	All ACs are with star rating. 30% lights are LEDs.
9	Use of energy saving bulbs (Compact florescent light/LED lights)	✓	50% lights are LEDs.
10	Awareness signage on electricity conservation	✓	Electricity conservation signage are provided on laboratory notice boards. Signage should be provided near all switch boards.

Solid Waste Management

Sr. No.	Measures		Remarks (If any)
1	Waste segregation practices and supporting hardware for waste segregation (Dry recyclable, organic, plastic, hazardous and E waste)	✓	Dry recyclable waste, e-waste and paper waste segregation is practiced.

2	Setting up recycling / composting/ biogas generation facility	✓	Campus has vermicomposting facility and is planning to install composting unit.
3	Minimize use of paper through digitalization	✓	'Learning Management System' has helped in reducing paper use.
4	Printing on both sides of paper/ Reuse of printed paper/ envelopes	✓	
5	Mechanism for collection & disposal of E-waste as applicable regulation	✓	E-waste is stored and handed over to 'local authorities'.
6	Single use plastic free campus	✓	College has prohibited the use of single use plastic.
7	Inventories of waste generation and records of waste disposal	X	Records shall be maintained properly
8	Recycle/ archiving of paper waste	X	Paper recycling unit shall be installed in the campus.
9	Segregation of dry and wet waste	✓	Blue and green coloured bins are installed for segregation.
10	Purchase of electronic products from companies which have service for disposal of product with buyback policy	✓	
11	Recreating into new sustainable products	✓	Waste materials are being used by students for projects and during festivals.

Environmental Audit

Sr. No.	Type of audit		Remarks (If any)
1	Energy audit (includes energy consumption, thermal comfort, visual comfort)	X	Energy Audit helps to assess existing energy balance, implement energy efficient operational strategies and adopt Energy Conservation Measures (ECM) effectively.
2	Sound/ Noise and lux level monitoring (including indoor noise level, outdoor noise level)	✓	College has conducted environmental audit in MARCH 2023.
3	Water and waste audit (including water consumption, quality, solid waste generation, solid waste disposal process)	X	Records shall be maintained.
4	Safety Audit	✓	Safety audit recommendation shall be implemented.

Universal Access and Efficient Operation and Maintenance of Building

Sr. No.	Design feature		Remarks (If any)
1	Easy access to the main entrance of the building and minimum two exists	✓	
2	Energy efficient elevator	-	
3	Carpooling by staff and students/ use of Public transport/ Use of bicycles and battery-operated vehicles within Campus	✓	Most students use public transport. Carpooling is practiced by College staff.
4	Preferred car park spaces for differently Abled	X	
5	Ramp/ stairs with handrails on at least one side	✓	Handrails are installed on all staircases. Ramp to be installed at crucial places such as the main entrance.
6	Restrooms (toilets) in common areas/ Restroom for differently abled	X	Separate restroom for differently-abled is not provided.
7	Braille assistance for differently abled	✓	Braille kits, audio books are present in the library.
8	Availability of wheel chair	X	
9	Emergency response plan for natural and manmade emergencies	✓	
10	Fire exits, assembly points, first aids, firefighting systems	✓	First aid kits are provided in specific laboratories. Fire extinguishers and sand buckets are provided. Fire exit signage should be installed.
11	Regular maintenance of building	✓	In-house maintenance department is present.

Green Program

Sr. No.	Green program		Remarks (If any)
1	Upcycling of waste. Recycling beyond books i.e. paper, aluminum, plastic, e-waste	✓	Dry waste is used by students for projects and during festivals for decoration purpose.
2	Creation of "Green Team" in the Institution / library.	✓	College has and Garden Committee.
3	Awareness programs on environment, energy management & safety (external sessions and academic courses)	✓	Each course has at least one environment related subject. Awareness sessions are arranged for student and also by faculty & students in nearby area.
4	Outreach, activities, green programs (Tree plantation, waste segregation, plastic waste collection, cleaning etc.) records/ photos of programs	✓	

5	Presence of system/ methodology available for implementation of green initiatives and green projects (long term system-based continuity and not an isolated/ standalone activity)	X	
6	Mindset for reduction, recycle of waste(Green mindsets)	✓	Students are motivated to recycle waste materials. Awareness programs are being conducted with the campus as well as in nearby area.
5	Digitization	✓	
6	E-archiving	✓	
7	E-resources: E books, Online Journals, membership of consortium	✓	
8	Maintaining green campus / Greening of campus	✓	Campus has 1800+ large trees, shrubs and potted plants.

✓ : Provided P: Planned/ under construction - : Not Applicable X : Not Provided

ANNEXURE-I



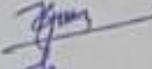


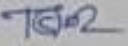
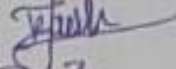
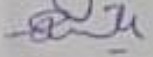
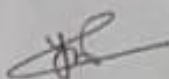
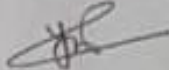
॥ सुर्वेभ्यो ज्ञानं सुखं तु वाः भवति ॥
Konkan Education Society's
'Bapusaheb Deshpande Educational Complex'
ANANDIBAI PRADHAN SCIENCE COLLEGE,
Nagothane, Tal.Raha, Dist. Raigad, Pin. 402 106 Phone: (02194) 222582
President: Sanjay Datta Patil Tel.Fax : 02194 - 223699
Principal: Dr. Sandesh S. Gurav E-mail: principalapsc@yahoo.co.in
Website: http://www.apenagothane.edu.in
Permanently affiliated to the University of Mumbai & Recognized by the Government of Maharashtra
Included Under Section 2(f)&12(B)of the U.G.C.
Reaccredited by NAAC with 'B' Grade

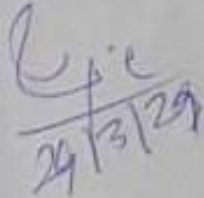
APSCN/ 768/2023

Dated: 23/03/2023

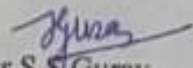
Green, Energy and Safety Audit was conducted at our college on Wednesday 29/03/2023 between 11.00a.m. to 3.00p.m. under the supervision of Safety Officer Advocate Bhagwan Nagargoje, Safety Officer recognized by Directorate of industrial safety and health Government of Maharashtra .

At the time of visit following staff members were present in the college premises.

- 1.Prin.Dr.Sandesh S.Gurav. 
- 2.Prof.(Dr)Dinesh V.Bhagat. 
- 3.Prof.Dr.S.D.Patil 
- 4.Prof.Dr.S.D.Tupare 
- 5.Dr. V.R.Jadhavar. 
- 6.Dr. V.S.Shinde 
- 7.Dr. V.S.Chavan 
- 8.Mr.Yatin Mhatre. 

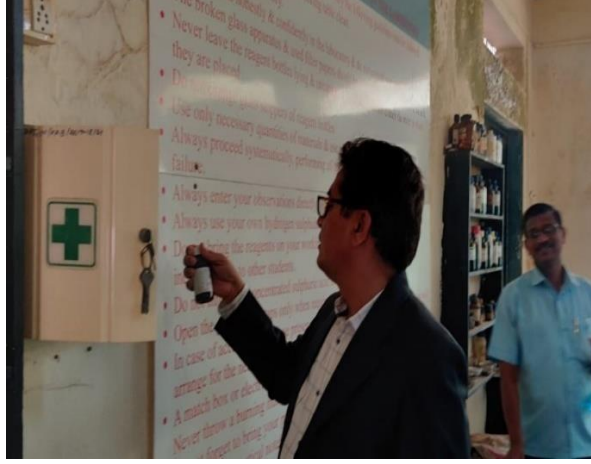

29/3/23




Dr.S.S.Gurav
PRINCIPAL
K.E.S. A. P Science College
Nagothane, Dist. Raigad (M.S.)

SUBJECT PHOTOGRAPHS

ANNEXURE-II



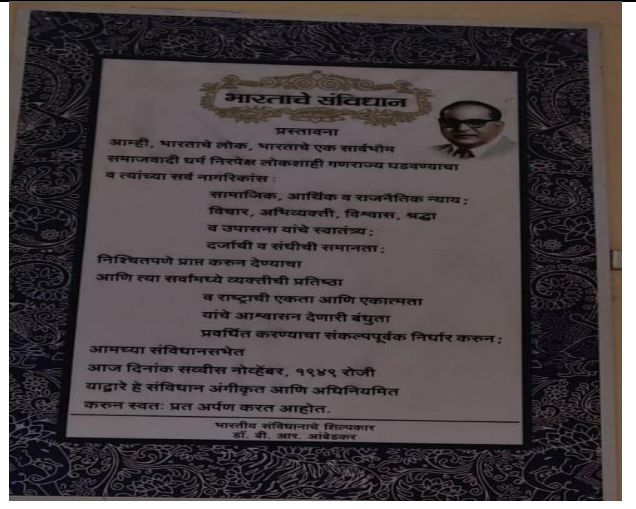
INSPECTION OF FIRST AID KIT



CAMPUS VISIT DURING AUDIT



DURING AUDIT



CONSTITUTION OF INDIA DISPLAYED

कोकण एज्युकेशन सोसायटी अलिवाग-रायगड संचालक मंडळ सन २०२२-२०२७		
अ.क्र.	हुद्दा	नाव
०१.	अध्यक्ष	मा. संजय दसा पाटील
०२.	उपाध्यक्ष	मा. अॅड. नंदा मनीहर देशमुख
०३.	कार्यवाह	मा. अॅड. सिद्धार्थ संजय पाटील
०४.	संचालक	मा. सुभाष प्रभाकर पाटील (पंडीतशेठ)
०५.	संचालक	मा. अॅड. हेमंत प्रभाकर नांगल
०६.	संचालक	मा. दिलीप दगडू पाटील
०७.	संचालक	मा. अॅड. पल्लवी सिद्धार्थ पाटील
०८.	मुख्य कार्यकारी अधिकारी	मा. विनायक दगडू खोपकर
०९.	सहाय्यक मुख्य कार्यकारी अधिकारी	मा. अशोक काशिनाथ गावडे
तज्ञ मार्गदर्शक		
०१.	तज्ञ मार्गदर्शक	मा. अॅड. आस्वाद पाटील
०२.	तज्ञ मार्गदर्शक	मा. राजीव वसंत माळी

BORD OF DIRECTOR



LIBRARY

प्रधान महाविद्यालयाला राज्यस्तरीय पुरस्कार प्रा. डॉ. विलास जाधवर उत्कृष्ट तालुका समन्वयक

नागोटणे, (वा.) येथील को.ए.सो. आनंदीबाई प्रधान विज्ञान महाविद्यालयास महाराष्ट्र राज्य उच्च व तंत्रशिक्षण विभाग आणि महाराष्ट्र माहिती तंत्रज्ञान सहाय्यता केंद्र यांच्या संयुक्त विद्यमाने घेण्यात आलेल्या करिअर कट्टा या उपक्रमांतर्गत राज्यस्तरीय विभागीय गटातून द्वितीय क्रमांक मिळाला आणि उत्कृष्ट तालुका समन्वयक म्हणून प्रा. डॉ. विलास जाधवर हे प्रथम क्रमांकाचे मानकरी ठरले आहेत.

महाराष्ट्र राज्य उच्च व तंत्रशिक्षण विभाग आणि महाराष्ट्र माहिती तंत्रज्ञान सहाय्यता केंद्र यांच्या संयुक्त विद्यमाने घेण्यात आलेल्या करिअर कट्टा या उपक्रमांतर्गत सन २०२२-२३ या शैक्षणिक वर्षामध्ये महाविद्यालयांमध्ये विविध उपक्रम घेण्यात आले होते. या उपक्रमांमधून को.ए.सो. आनंदीबाई प्रधान विज्ञान महाविद्यालयास राज्यस्तरीय विभागीय गटातून द्वितीय क्रमांक मिळाला आणि उत्कृष्ट तालुका समन्वयक म्हणून प्रा. डॉ. विलास जाधवर हे प्रथम क्रमांकाचे मानकरी ठरले आहेत.



प्रमाणपत्र, स्मृतिचिन्ह पुरस्काराचे स्वरूप

या पुरस्काराचा बक्षीस वितरण समारंभ शनिवारी मुंबई येथील के. जे. सोमय्या विद्यापीठामध्ये महाराष्ट्र राज्याचे उच्च व तंत्रशिक्षण विभाग संचालक डॉ. लल्लू देवळगावकर यांच्या हस्ते प्राचार्य डॉ. संदेश गुरव यांना उत्कृष्ट महाविद्यालयाचा आणि डॉ. विलास जाधवर यांना उत्कृष्ट तालुका समन्वयक म्हणून प्रमाणपत्र व स्मृतिचिन्ह देऊन गौरवण्यात आले आहे. यावेळी व्यासपीठावर महाराष्ट्र माहिती तंत्रज्ञान सहाय्यता केंद्राचे संचालक यशवंत शितोळे, के.जे.सोमय्या विद्यापीठाचे कुलगुरू व्ही. एन. राजशेखरन पिल्लई इत्यादी मान्यवर उपस्थित होते.

महाविद्यालयाचे सर्वस्तरातून अभिनंदन

महाविद्यालयाच्या या यशाबद्दल को. ए.सो.चे अध्यक्ष संजय पाटील, कार्यवाह अॅड. सिद्धार्थ पाटील, मुख्य कार्यकारी अधिकारी विनायक खोपकर, सहाय्यक मुख्य कार्यकारी अधिकारी अशोक गावडे व प्रशासन अधिकारी प्रा. सुरेंद्र दातार, महाविद्यालय विकास समितीचे सदस्य नरेंद्र जैन, अनिल काळे, अब्बास नागोटणेवाल, अॅड. सोनल जैन अंतर्गत गुणवत्ता मूल्यमापन कक्ष प्रमुख प्रा. डॉ. दिनेश भगत तसेच महाविद्यालयातील प्राध्यापक व प्राध्यापकेतर कर्मचारी व सर्व विद्यार्थी यांनी अभिनंदन करून पुढील वाटचालीसाठी शुभेच्छा दिल्या आहेत.





रयतेचा कैवारी

शैक्षणिक समृद्धीसाठी कटिबद्ध डिजिटल दैनिक



@ संपादक - शाहू संभाजी भारती (डिजिटल शैक्षणिक दैनिक 'रयतेचा कैवारी' - वर्ष तिसरे - अंक १३०) शनिवार दि. १२/०२/२०२२ पान ०४

आनंदीबाई प्रधान वरिष्ठ महाविद्यालयाचे प्राचार्य डॉ. संदेश गुरव यांची

रायगड: दि. ११ (दै. रयतेचा कैवारी, जिल्हा प्रतिनिधी सुनील घोलप) महाराष्ट्र राज्य माहिती तंत्रज्ञान सहाय्यता केंद्र व महाराष्ट्र राज्य उच्च व तंत्र शिक्षण विभाग यांच्या मार्फत करीअर कट्टा या उपक्रमांतर्गत महाविद्यालयाने नोंदवलेला सहभाग व विद्यार्थी सहायता आणि त्यांची शैक्षणिक प्रगती याविषयी केलेल्या विशेष कार्याची दखल घेऊन नागोठणे येथील आनंदीबाई प्रधान वरिष्ठ महाविद्यालयाचे प्राचार्य डॉ. संदेश गुरव यांना राज्यस्तरीय २०२१-२२ या शैक्षणिक वर्षाचा उत्कृष्ट प्राचार्य म्हणून पुरस्कार मिळाला आहे. या पुरस्कारासाठी राज्यातील केवळ सात प्राचार्यांची निवड केली आहे. राज्य भारतातील सात प्राचार्यांमध्ये डॉ. संदेश गुरव यांना सन्मान मिळाल्यामुळे सरांचे कोकण एज्युकेशन सोसायटीचे अध्यक्ष संजय दत्ता पाटील,

कार्याध्यक्ष अजितभाई शहा, कार्यकारी अधिकारी विनायक खोपकर, महाविद्यालय विकास समितीचे नरेंद्रशेठ जैन, अनिलशेठ काळे, अब्बासभाई नागोठनावाला, संस्थेच्या सोनल जैन यांच्यासह सर्व शिक्षक शिक्षकेतर कर्मचारी यांनी त्यांचे अभिनंदन केले आहे. आनंदीबाई प्रधान महाविद्यालय हे संस्थेचे नागोठणे परीसरातील एक नामांकित वरिष्ठ महाविद्यालय आहे.

येथील जवळपास सर्व प्राध्यापक पी. एच. डी. प्राप्त असून विद्यार्थ्यांच्या शैक्षणिक, क्रीडा, स्पर्धा परीक्षा तसेच सामाजिक कार्य अशा सर्वांगीण विकासासाठी सदोदित कार्यरत असतात. सदर महाविद्यालय डॉ. संदेश गुरव यांच्या कुशल मार्गदर्शनाखाली विद्यार्थ्यांच्या शैक्षणिक प्रगतीसाठी कटिबद्ध असल्यामुळे महाविद्यालयाकडे विद्यार्थ्यांचा ओढा सतत वाढत असून विद्यार्थी प्रगतीचा आलेखही उंचावत आहे. नागोठणे परीसरात प्राचार्यांना मिळालेल्या पुरस्काराने आनंद व्यक्त होत असून पंचक्रोशीसाठी ही अभिमानाची बाब आहे.

उत्कृष्ट प्राचार्य म्हणून निवड



राज्यस्तरीय उत्कृष्ट प्राचार्य पुरस्कार
मिळाल्या बद्दल डॉ. संदेश गुरव यांचे
अभिनंदन करतांना सहकारी प्राध्यापक वर्ग

DECLARATION

The President and principal has requested us to carry out Green, safety & energy audit of college campus, So this Audit is carried out as per prevailing condition of college and Safety provisions for Educational Campus.

Safety Auditor will not be responsible for any changes, in the College campus and extension or modification of building, any unsafe condition and/ or unsafe behavior, & Housekeeping or any environmental changes manmade or Natural after the Safety Audit.

THANK -YOU

