

Green Audit

Energy Audit

Environment Audit

Clean and Green Campus Recognition Award

2021-22

For

ANJUMAN ISLAM JANJIRA DEGREE COLLEGE OF SCIENCE MURUD



AUDIT CONDUCTED BY

Vrindavan Landscape & Ecological Solutions, MUMBAI

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Quality audits on environment and energy are regularly undertaken by the institution.

Sr. No.	Quality audits on environment and energy	
1	Green Audit	Vrindavan Landscape and Ecological solutions, Mumbai
2	Energy Audit	Vrindavan Landscape and Ecological solutions, Mumbai
3	Environment Audit	Vrindavan Landscape and Ecological solutions , Mumbai
4	Clean and Green Campus Recognition Award	Vrindavan Landscape and Ecological solutions , Mumbai
5	Environmental Promotional Activities	06 Activities

Index of Criteria

Environmental Consciousness and Sustainability

Sr. No.	Efforts for the conduct of Quality Audits on Environment	Relevant Exhibits
1	Green Audit	Certificates and Report
2	Energy Audit	Certificates and Report
3	Environment Audit	Certificates and Report
4	Clean and Green Campus Recognition Award	Certificate
5	List of Environmental Promotional Activities	List of the Activities
6	Environmental Promotional Activities	PPT

Green Audit

Energy Audit

Environment Audit

Report

Green; Energy & Environment Audit

**ANJUMAN ISLAM JANJIRA DEGREE
COLLEGE OF SCIENCE MURUD**

2021-22

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Introduction

Green, Energy & Environment Audit at ANJUMAN ISLAM JANJIRA DEGREE COLLEGE OF SCIENCE was conducted in accordance with risk-based audit methodology in the month of February 2022.

The purpose of the audit was to make sure that the practices followed in the campus are healthy and environmentally friendly. With this in mind, the specific objectives of the audit were to evaluate the degree to which the departments are in compliance with the applicable regulations, policies and standards and to ensure that the development of the college aims at sustainable development and green campus. The audit was based on an examination of the policies laid down, on data analysis & collected, findings from interviews with staff.

The team members of the audit study.

1. Dr, Sajid F. Shaikh. Principal, Anjuman Islam Janjira , Degree College of Science.
2. Mr.Rahim A. Bagwan Dept. Botany , Degree College of Science, Murud - Janjira.
3. Mr. Amanulla Khan Dept. Botany, Degree College of Science, Murud - Janjira.
4. Mr. Deepak Mhatre Project Coordinator VLAES.
5. Mr. Suraj Waghmare Asst. Project Coordinator VLAES

EXECUTIVE SUMMARY

The college was established in 2009-10. It was for general science. In 2011-12 college expanded with graduation in Computer science. It underwent assessment and accreditation by NAAC in academic year 2018-19 with “B” Grade and 2.35 CGPA. This college also received Best College Award, Best Principal Award, Best Teacher Award, and Best Non Teaching Award by PROTON in 2021-22. From academic year 2021- 22 this college start post- graduation courses in M.Sc. Botany and Chemistry.

VISION

To achieve Academic Excellence by giving impetus and adapting to measures for enhancing effective quality sustenance and progression on all key facets of education. Providing a dynamic and conducive Environment for all in order to Inculcate, Infuse, Imbibe, Equip and Disseminate Value Oriented Learning, Creativity, Innovation Social Consciousness to achieve Sustainable Livelihood.

MISSION

- ❖ To inculcate Love/Inclination for learning by adapting to Latest Teaching Learning Methods for Enhanced Learning & Creativity.
- ❖ To Value and by Introducing & Integrating Skill in the Knowledge Content for gaining Competitive Edge with the view to be Self-Reliant.
- ❖ To provide an Equal Platform for Higher Education, Employability & Entrepreneurship for all.
- ❖ To promote and support Research Oriented Activities.
- ❖ To train Students to be Creative and Competitive to face Real World Challenges of the new millennium.
- ❖ To develop a sense spirit-de-corps through Co-curricular, Extra-Curricular and Outreach Activities.
- ❖ To promote activities to enhance Societal Consciousness/ Community development, well-being & harmony.

ENVIRONMENTAL AWARENESS INITIATIVE

- ❖ Anjuman Degree college of Science conducts regular trainings to staff and faculties regarding use of bicycles, controlled use of paper, plantation target and implementation. Display of environment protection banners, posters like save water, save energy at prominent places, waste disposal bins for wet and dry waste disposal bins for wet and dry waste disposal are some of the initiatives taken.

KEY POINTS OBSERVED

Renewable Energy

1. College is planning to install solar system
2. College has Vermicomposting bed facility installed.

Green Campus Initiative

3. College has prepared Green Environmental policy and has taken efforts for sustainable development on the college campus.
4. College has formed the team of faculty and student which works to maintain biodiversity on the campus and also participates in preventing pollution in society through various drives.

Environment & Energy Initiative

- The Institute has botanical garden.
- In the periphery of the campus, along the rear and wings, a thick belt of large trees is planted to bring down noise and cut down dust storms.
- Indoor plants can be potted along the corridors and entrance of the building.
- College has plane to include environment protection and management as a subject in curriculum.
- College has conducted Environment Awareness trainings and workshop for faculty and students.

MAJOR RECOMMENDATIONS

- E-waste management system needs to be adopted.



I . Energy Audit

This indicator addresses energy consumption, energy sources, energy monitoring, lighting, appliance, natural gas and vehicles. Energy use is clearly an important aspect of campus sustainability and thus requires no explanation for its inclusion in the assessment. Electricity, Diesel, Petrol, LPG, CNG are the energy sources used in the college campus.

Energy efficiency:

• **Electricity:**

- A single electricity meter is provided for the entire complex. The monthly average electricity consumption from December, 2021 to February, 2022 is 500 Units
- Further, we presume that the institute has holiday in May/ June each year and Dec January & February are the winter season, in which energy consumption is less.
- The areas of major consumption of electricity are Water Pump , Ac ,fans and computers
- The usage of natural light is optimized through well designed structure and windows
- Almost all the lamps are replaced with LED.
- The switching of the lamps is done manually.

□ **Renewable Energy**

- College is planning to install solar panels .
- College has Vermicomposting bed facility installed.
- The Solid Waste of the campus like dried leaves, Stem and other green plant part are collected and allowed to perish in the garden serving as natural compost.
- For the management of Solid Waste Vermicompost pits are being created in the campus (in Botanical Garden) and the work for the same is in progress. Monitoring of the same is under way by Botany Department. The compost thereby generated shall be used for the Botanical Garden and plantation in the campus.

Air Conditioning System

- The Air Conditioners are operated as required with manual control. The operation is minimal, consequently automation may not be economical.
- The room temperature is maintained at 24 to 25 °C, which is well within the recommended values.
- The Air Conditioners are serviced regularly and properly maintained.
- Most of the Air conditioners units are energy efficient with star ratings of 3 and above.
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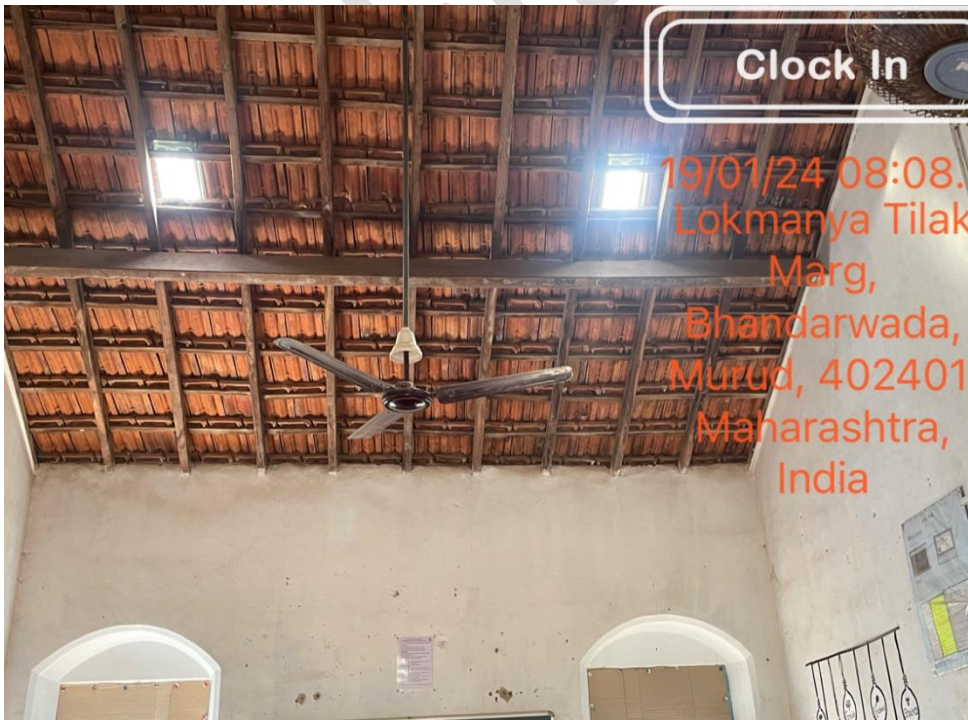
LED Lamps Distribution Table

<u>Lighting System</u>			
Sr.No	Ggadgets	Total No	watt
1	Led Tube Light	108	20
2	Ceiling Fans	87	75 Avg
3	Air Conditioners /Split Ac	07	500 Avg
4	Desktops	101	70
5	Laptops	3	50
6	Printers	5	30
7	CCTV Cameras	72	10
8	Water dispenser	02	0

RECOMMENDATIONS

The College administration may consider on top priority

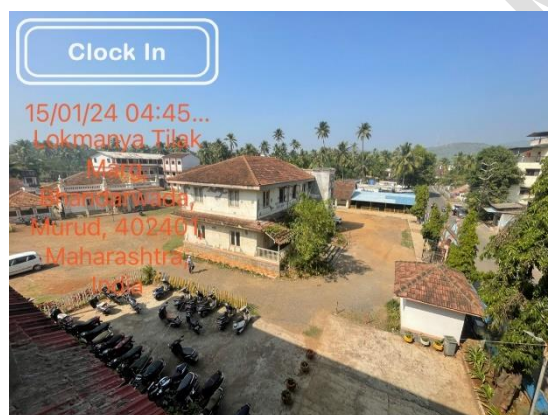
1. To use Common or public Vehicle instead individual vehicle to conserve fossil fuel
2. Energy Consumption for each building should be estimated to design the energy conservation plan.
3. Instead of out-sourcing the Annual Maintenance of Electrical Equipment college concern department staff shall take that responsibility
4. Energy saving awareness shall be done by displaying the boards at appropriate place
5. Solar system shall be installed to saving electricity



USE OF NATURAL LIGH

II Environment Audit

- The Institute has botanical garden.
- In the periphery of the campus, along the rear and wings, a thick belt of large trees is planted to bring down noise and cut down dust storms.
- Indoor plants can be potted along the corridors and entrance of the building.
- College has plane to include environment protection and management as a subject in curriculum.
- College has conducted Environment Awareness trainings and workshop for faculty and students.



□ Environment & Energy Initiative

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❖ Air Qquality & Ventilation

- The class rooms and other area are well ventilated to ensure proper air quality.
- The fans are appropriately installed to ensure proper air circulation
- The indoor as well as outdoor plants have also been provided to improve the environment.



Water Quality & Conservation

- The water is supplied by the Corporation, which is a common practice in small city.
- Water purifiers & coolers are provided at convenient locations and on each floor.
- The distribution network and piping are more or less satisfactory and adequate.



□ Waste Management

- The water is discharged into the common municipal drain, which is a common practice in and around small cities.

practic

- The organic waste is segregated and disposed of through municipal waste.
- The electronic gadgets / waste is either donated if useful or handed over to waste collectors.
- The general solid waste is disposed of through municipal corporation.

□ Waste Management

• 1. Solid waste Collection Bins

- The Solid Waste of the campus like dried leaves, Stem and other green plant parts are collected and allowed to perish in the garden serving as natural compost. The paper waste and other waste is collected in Dustbins as dry and wet waste separately at different locations in the campus. This is further collected by Waste Collecting Vehicle of Nagar parishad. Waste paper is collected in the campus for mulching.



• 2. Solid waste management (Vermicompost pit)

- For the management of Solid Waste Vermicompost pits are being created in the campus (in Botanical garden) and the work for the same is in progress. Monitoring of the same is under way by Botany Department. The compost thereby generated shall be used for the Botanical garden and plantation in the campus.

• 3. E-waste management

- The E-waste collected is spared for reuse of some of its parts when there is damage caused to the working E appliances. Some of the E-wastes are used by computer science students running various projects.

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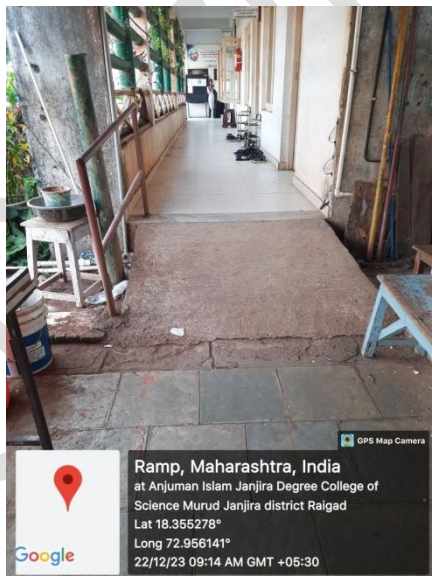
Biomedical and Chemical Waste management

- To reduce the chemical waste generated in the laboratories experiments are run at micro scale to minimize the quantity of chemical waste generated. The handling of hazardous chemicals is done in specific cabinets to prevent the effects that may be caused due to these chemicals. They are disposed of in specific tanks and before final disposal they are neutralized to minimize the effects of these hazardous wastes in the liquid waste generated.
- 5. Plastic waste management: With the huge negative impact that plastic has on the environment, it has become necessary to ensure a plastic free zone in our college surroundings. Students make a garden plant pot from Waste plastic bottles



□ Infrastructure usage

- The on-campus movement is distributed with multiple staircases.
- There are adequate fire extinguishers located at key areas. The college has initiated appropriate measures to meet the safety requirement.
- The draining system for washrooms is efficient and effective.
- No seepage was observed in the building premises.
- The college has made facilities for physically disabled students for their easy access to the classrooms.
- Ramps are constructed in areas connected to classroom building.
- This facility helps the physically disabled students to reach their classrooms and laboratories with ease.
- Scribes are provided the students with prior permission of the university after the candidate has received a permission letter to that effect.
- Display boards and sign boards are provided at various places in the campus for any one visiting the college as well as for the easy access to classrooms as well as laboratories.



Carbon Sequestration :

Carbon sequestration is the removal of carbon dioxide from the air by plants. Carbon storage is the amount of carbon already bound up in the parts of woody vegetation.

- Thirteen big trees and some small plants are planted to mitigate CO₂ emissions and have the potential to enhance carbon sequestration capacity on the campus.

CARBON SEQUESTRATION							
Tree Name	Botanical Name	Wood Density (gm/cm ³)	Height (cm)	Girth (cm)	Canopy	Total Biomass (gms)	Total carbon sequestration kg/y
					(cm)		
Bottle palm	<i>Roystonea regia</i> (H.B.K.) Cooke	0.6	1000	85	400	384144	192
Rain tree	<i>Samanea saman</i> (Jacq.) Merrill	0.45	10	1.65	9	569422	284
Asupalav (D)	<i>Polyalthia longifolia</i> var. <i>pendula</i> (Sonn.) Thw.	0.59	6	0.89	3	281296	140
Pimpal	<i>Ficus religiosa</i> Linn.	0.44	8	1.45	9	556827	278
Amba	<i>Mangifera indica</i> Linn.	0.52	8	1.3	6	806313	403
Vilayati chinch	<i>Pithecellobium dulce</i> (Roxb.) Benth.	0.58	5	0.86	6	215167	107
Deshi badam	<i>Terminalia catappa</i> Linn.	0.52	8	0.89	6	330563	165

□ Water Management

- Nagarparishad supplies water to the institute.. The charges are as per water consumption in the premises
- Our college examine the quality and usage of water in the college campus. Water auditing is conducted for the evaluation of facilities of raw water intake and determining the facilities for water treatment and reuse.
- Mops are used for floor cleaning.
- No leaking faucets were seen anywhere in washrooms
- If water leakage is observed, plumber is called immediately to attend to the complaints.
- Water conservation faucets in washrooms were not seen. Installation of such faucets can save water and will help in minimizing the water footprint of the institute.
- No signage emphasizing water conservation were found in the institute.
- Water conservation education less and need to be done regularly.
- After college program, administration encouraged to conserve water in
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WATER MANAGEMENT

USES AND MANAGEMENT

SOURCE OF WATER

Sr. No.	Resource	Quantity
1	Nagar parishad (water supply)	1
2	Well	1
3	Water reserve tank	3

WATER USERS IN CAMPUS

Sr. No.	Person in different section	Strength (No. of person)
1	Staff	27
2	Students	Approx. 250
3	Visitors	Approx.10

QUANTITY OF WATER USED IN DIFFERENT SECTIONS OF THE CAMPUS

Sr. No.	Sections	Water Use (Litter/day)
1	Canteen	100
2	Urinals and Toilets	1000
3	Departments	200
4	Laboratories	500
5	Garden	500
6	Drinking	500
7	Construction Work	10000

MAJOR OBSERVATIONS IN REGARD OF WATER USAGES AND CONSERVATION PLAN

- At present waste water is not recycled or reused in any form in the college premises

- Drip irrigation and sprinklers are used for watering the Botanical garden. The garden is also watered with water pipe, two times a day for 02 hours each time.

□ Waste water Managem en

- Sanitary wastewater generated from washrooms is connected to sewerage system provided by BMC.
- Chemical wastewater generated in chemical labs in the institute is also connected to sewerage system.



□ Infrastructure & Safety

Movement on-campus (Distributed / non-distributed leading to crowds)

- The premises are provided with multiple staircases with necessary entrances to ensure quick and effective movement in normal as well as emergency situations.
- The movement of vehicles inside the campus is with vehicles of staff faculties, students and guests are not allowed to enter the campus.
- There is restriction on the usage of plastic, which may be extended to completely ban plastic usage inside the campus

□ Firefighting & fire escape system :

- There are efficient fire extinguishers is the
- premises, which are checked / refitted as per the supulàted frequency.
- The premise is provided with multiple
- staircases with requisite entrances to ensure quick and effective movement in emergency
- conditions.



□ Draining system :

- The drains from the washrooms and other areas are property collected and disposed

□ **Seepage in the building:**

- The premise was visually inspected for seepage . No seepage was observed in any of the places.

□ **Green Culture**

- The LED / LCD monitors laptops have been procured which are efficient
- These monitors are not only energy efficient but also generate minimal heat and cut down on air conditioning load,
- Electronic communication is encouraged to minimize usage of papers.
- Most of the papers are reused for doubled-sided printing to further minimize usage of paper.
- The following steps may be initiated to further enhance the efficiency of the systems.
- An efficient power management system may be incorporated to
- Switch off the display if not in use.
- Put the computer in sleep / switch off the machines, if not used for prolonged periods.
- Optimize the brightness of the screen.
- Discourage use of screen savers, which has similar power consumption.
- Paper-less communication:
 - The major internal as well as external communication is through electronic media.
- Re-using one sided paper for printing:
 - It was observed that two sides printed on the back side of used paper in more than 80 % of the cases.



III. Green Audit

GREEN BELT AREA & BIO-DIVERSITY

OBSERVATIONS

Campus is located in the vicinity of approximately 350 types (species) flora and fauna. Various tree plantation programs are being organized during the month of July and August at college campus and surrounding villages through NSS unit.

This program helps in encouraging eco-friendly environment which provides pure oxygen within the institute and awareness among villagers. The plantation program includes various types of indigenous species of ornamental and medicinal. Instead of maintaining biodiversity the similar species planted is observed for example “Coconut and Betel nut”. The dominant species in green belt are Coconut and Betel nut, Sag, Mango Tree, Jack Fruit Tree, *Terminalia* sp. etc.

Types of trees planted which are environment friendly are enlisted below:

Neem, Mango Tree, Jamun, Jack Fruit, Teak, Guava, Chiku, Cashew, Exotic Flora, Asoka, *Durenta* Plant.

RECOMMENDATIONS

- ✓ Artificial nests and water ponds are recommended to attract different birds in season
- ✓ More drip irrigation is strongly recommended to conserve the water
- ✓ Reuse of the water shall be done instead of use of fresh water

Plant Diversity

A survey was carried out to find plant diversity in the college campus of Anjuman Degree College of Science Murud Janjira. The survey was focused on the diversity of plants on the basis of their classification and economic importance.

Angiosperm



Acalypha indica L. (khokhali)

Family: Euphorbiaceae



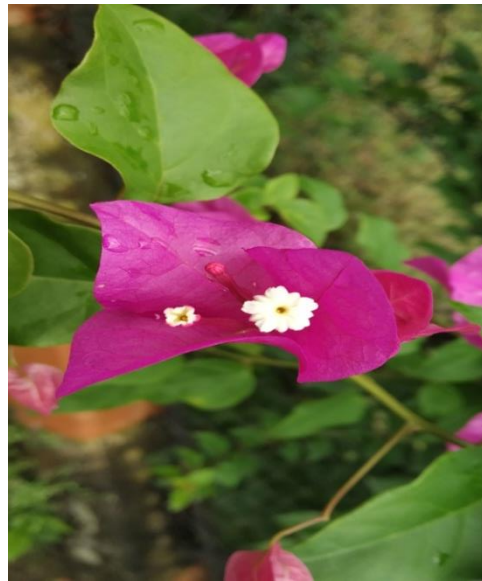
Argemone Mexicana L. (pivala dhotra)

Family: Papaveraceae



***Asparagus racemosus* Willd.** (Shatavari)

Family: Asparagaceae



***Bougainvillea spectabilis* Willd.**(kagadi phul)

Family: Nyctaginaceae



***Caesalpinia pulcherrima* (L.) Sw.**(Shankasur)

Family: Caesalpinioideae



***Calotropis gigantea* (L.) W.T.Aiton** (Rui)

Family: Apocynaceae



Cassia fistula L. (Bahava)

Family: Fabaceae



Catharanthus roseus (L.) G. Don

(Sadaphuli) Family: Apocynaceae



Dioscorea bulbifera L. (Karanda)

Family: Dioscoreaceae



Duranta erecta L. (Piwalimendi)

Family: Verbenaceae



Euphorbia hirta L. (Dudhi)

Family: Euphorbiaceae

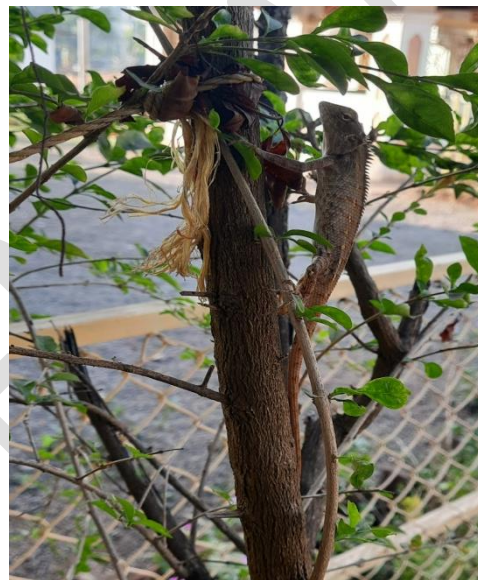


Jatropha gossypifolia L. (Ratanjoti)

Family: Euphorbiaceae



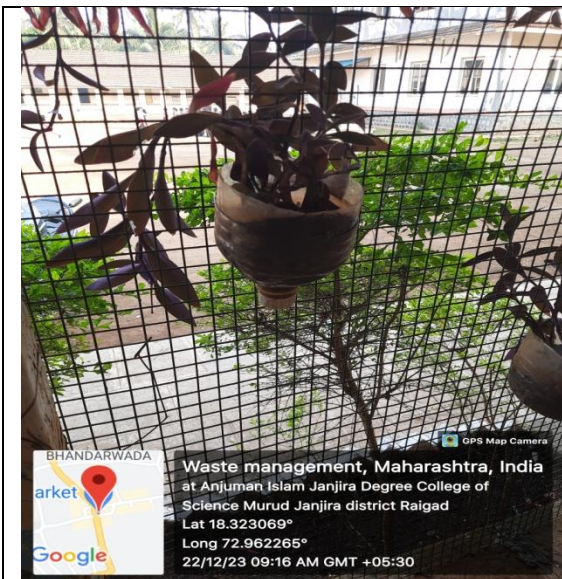
Signature Spider



Electric bike



Bicycle



Best from Plastic waste



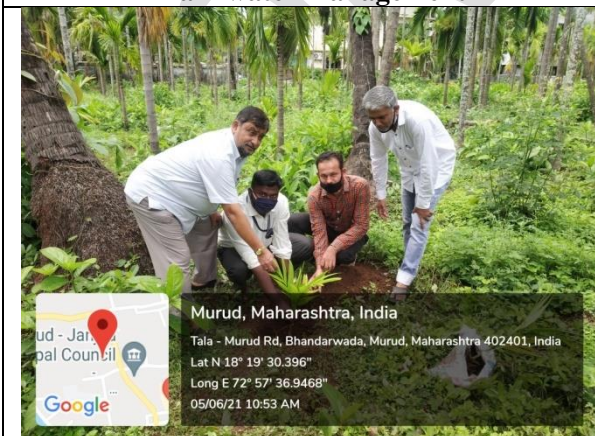
Vermicompost Plant



Rain water management



Electric power saver system using Timer



Tree Plantation



Tree Plantation

Clean and Green Recognition Award

VI/21/04/22

GREEN AUDIT CERTIFICATE

Is warded for 2021-22 to the Esteemed Institution

Anjuman Islam Janjira Degree College Of Science Murud- Raigad

As part of the Institutions invites for a Healthy & Sustainable College the audit was conducted.

We appreciated the immense efforts taken by Staff and Sudents towards the efficient Management of premise.

Issued on Friday, 02 April 2022



Project Head

Vrindavan Landscape & Ecological Solutions

vrindavan.shradha@gmail.com

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Photo Plate



Plastic Awareness Event



Awareness on sound pollution

15/02/2022

SS



Clean and Green

19/07/2022



Plastic Bottle Recycle

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Swatch Bharat Abhiyan

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Tree Plantation at college campus

Geo tagged photographs of waste collection facility in the campus



Botanical garden





GPS Map Camera

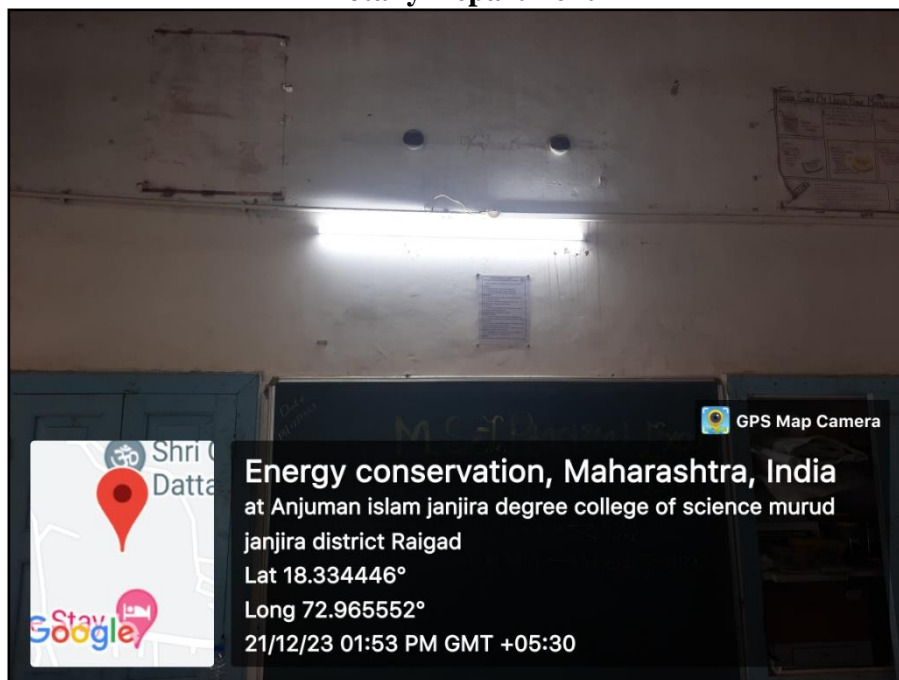


Waste management, Maharashtra, India
at Anjuman Islam Janjira Degree College of Science Murud
Janjira district Raigad
Lat 18.323069°
Long 72.962265°
22/12/23 09:18 AM GMT +05:30

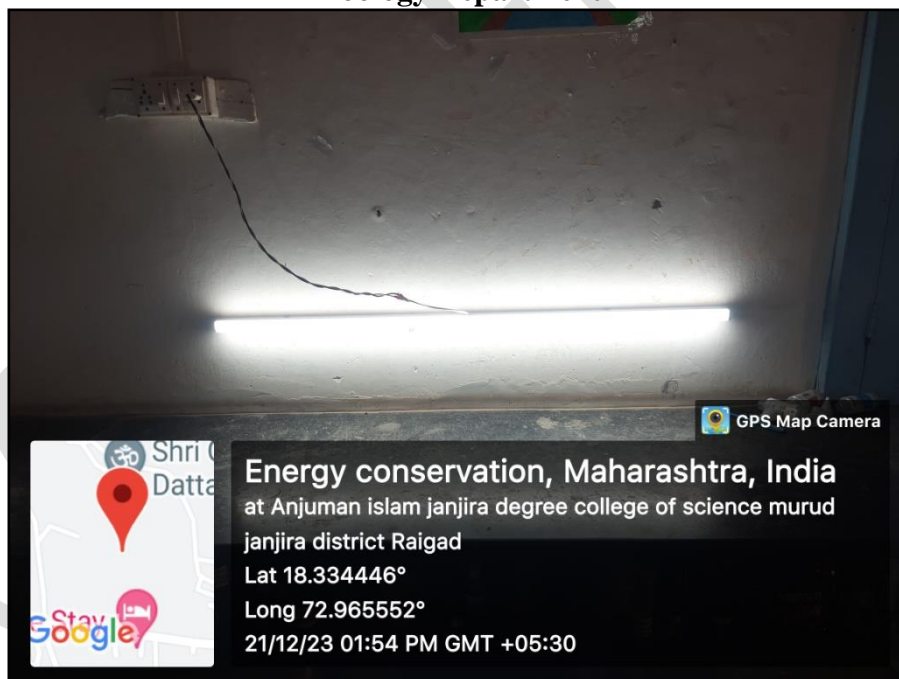
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2 Energy Conservation through LED Lamps

Botany Department



Zoology Department



Physics Department

Chemistry Department

Computer Science Department



Murud Janjira, Raigad, Maharashtra 402401, India, Maharashtra, India
Plantation Drive under Azadi Ka Amrut Mahotsav * Har Ghar Tiranga* Anjuman Islam Janjira
Degres College of Science, Murud Janjira, Raigad
Lat 18.331211°
Long 72.960823°
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