



CYCLE 3 - NAAC ACCREDITATION 2024

CRITERION 7

INSTITUTIONAL VALUES AND BEST PRACTICES

7.1 Institutional Values and Social Responsibilities

Submitted to:



National Assessment and Accreditation Council

7.1.2 The Institution has facilities and initiatives for

1. Alternate sources of energy and energy conservation measures
2. Management of the various types of degradable and non-degradable waste
3. Water conservation
4. Green campus initiatives
5. Disabled-friendly, barrier-free environment

Sl No:	Content	Page no
1.	Details of alternate sources of energy and energy conservation measures	3
2.	Details of degradable and non-degradable waste management	13
3.	Details of water conservation facilities	21
4.	Details of green campus initiatives	27
5.	Details of disabled-friendly, barrier-free environment facilities	37

DETAILS OF ALTERNATE SOURCES OF ENERGY AND ENERGY CONSERVATION MEASURES

Sl No:	Content	Page no
ALTERNATE SOURCES OF ENERGY		
1.	Solar Energy	4
2.	Biogas plant	6
3.	Sensor-based DG sets	7
ENERGY CONSERVATION MEASURES		
4.	Installation of solar panels	9
5.	LED bulb usage	9
6.	Replacement of split ac with starred inverter AC	10
7.	Use of BLDC fan	10
8.	Sensor-based energy conservation Energy efficiency evaluation lab	11
9.	Tist ENCON club	12
10.	Steam cooking	12

1. Solar energy

The institution has two standalone solar plants, having capacities of 9.9kWp and 8.25kWp respectively.

9.9 kWp Solar plant at Einstein block: 9.9 kWp plant is commissioned in 5/2007 at the top of Einstein Block. The plant has a designated output of 24 units /day (60Nos of 165 Wp panels and was feeding power to the central library, digital library & Computer labs. Since the life of the battery is exhausted,the system is modified with a 10 kVA Digital sine wave Solar Inverter with control card ,SMPS card ,MPPT charger & 10 numbers of 150 AH ,12 V solar battery on November 2022.



- b. **8.25 kWp Solar plant at Aryabhata block:** 8.25 kWp standalone solar plant is commissioned in 12/2014 at the top of Aryabhata Block and is feeding power to ROS Lab of RA department & Advanced communication lab of EC department. Each solar panel is (36 Nos of 230 Wp) fitted with in built MPPT solar energy optimizer



2. Biogas plant:

The institute has two biogas plants of 15m³ capacity. The biogas plant aims at addressing the issue of disposal of waste from the boys hostel and girls hostel and other parts of the campus in an eco-friendly manner.



3.Sensor based DG SETS

4 DG sets is now providing backup power to the entire college, Boy’s hostel & ladies hostel respectively. Among that 2 DG set is equipped with an AMF facility (Sensor based)

a.200KVA DG set near canteen(sensor based)



b. 25kVA DG set at girls hostel(sensor based)



c. 125KVA Near Einstein Block



d.D 25 KVA at boys hostel



ENERGY CONSERVATION MEASURES

ENERGY-EFFICIENT EQUIPMENTS USAGE:

4. Installation of solar plants- savings in electricity bills Average yearly savings of 6 kWh after installation of 18.15 kw solar plant



5. Use of LED bulbs

90% of total light loads are LED tubes and bulbs. In addition to the present LED bulbs, when a replacement is necessary because of aging or other circumstances conventional bulbs are gradually being replaced with LED lights.



6. Use of BLDC fans

Conventional fans are progressively being replaced with BLDC fans when a replacement is required due to ageing or other conditions



7. Split ACs are replaced with starred inverter AC



8. Energy efficiency and evaluation lab

The EEE department has an Energy Efficiency and Evaluation Lab. The Energy Efficiency Evaluation Lab aims to determine the luminous efficiency and power quality issues of various types of light fittings. Students utilize the labs for doing final-year Major projects



9. TIST ENCON CLUB

The main objective of this ENCON club is to drive home energy conservation and environment protection in the minds of students, by planning and organizing regular activities. Talks, seminars, workshops, exhibitions, and other awareness programs are undertaken by these clubs every year to spread the message of energy conservation and environment protection.

It create a strong network environment-conscious people who would pass on the tradition to generation next. At present there are about 50 BPCL Kochi refinery sponsored ENCON clubs in educational institution across the state of Kerala.



- <https://tistcochin.edu.in/ee/association-and-activities/>

10. Steam Cooking Facilities

Steam cooking facilities were provided in the ladies and boys hostel to save energy and also for serving healthy food.

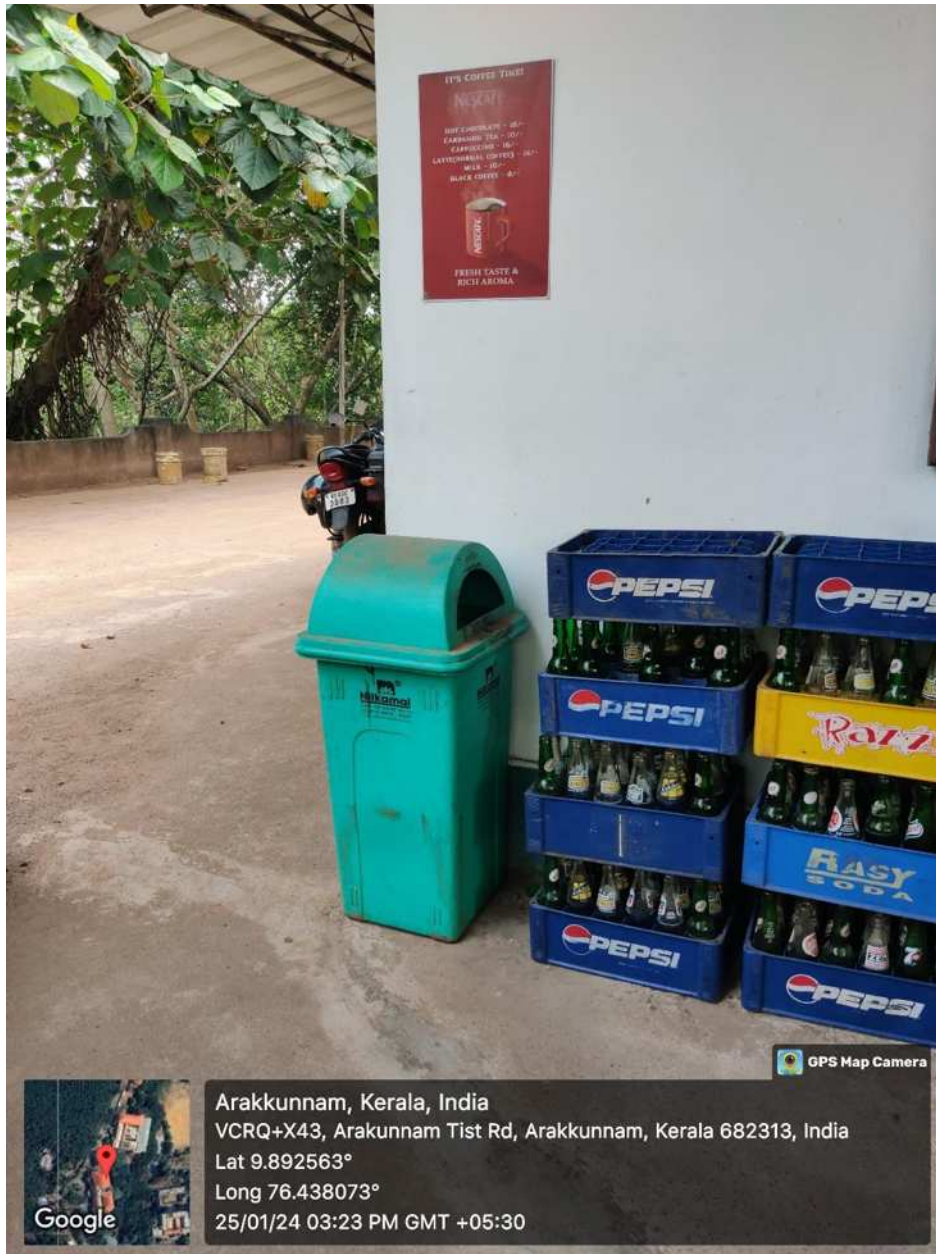


DETAILS OF DEGRADABLE AND NON-DEGRADABLE WASTE MANAGEMENT

SI No:	Content	Page no
DEGRADABLE WASTE MANAGEMENT		
1.	Solid Waste Management	14
2.	Sewage disposal system	15
3.	Biogas plant	17
NON DEGRADABLE WASTE MANAGEMENT		
4.	E-waste management	18
5.	Pet Bottle Booth	18
6.	Incinerator	20

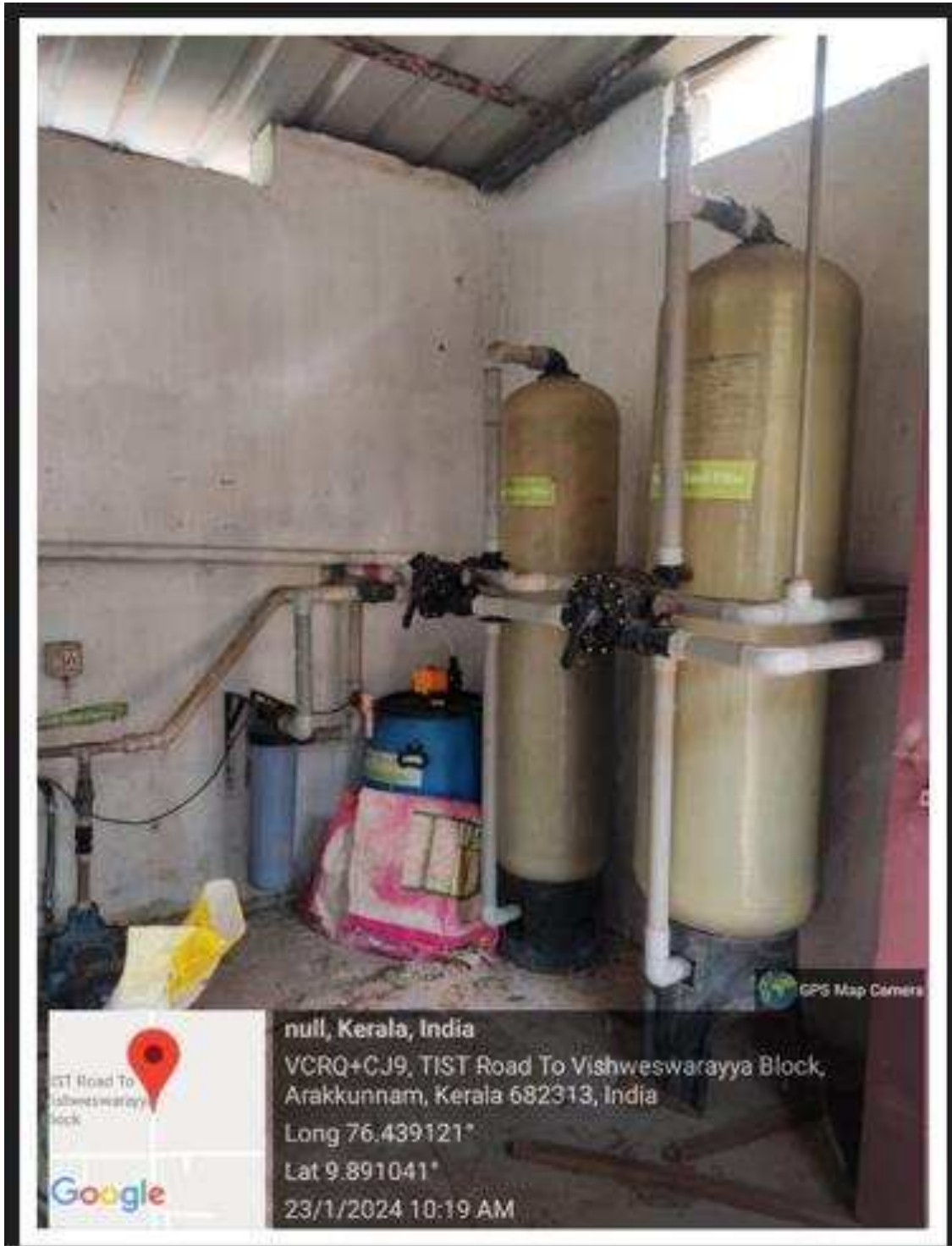
FACILITIES FOR MANAGEMENT OF DEGRADABLE WASTE

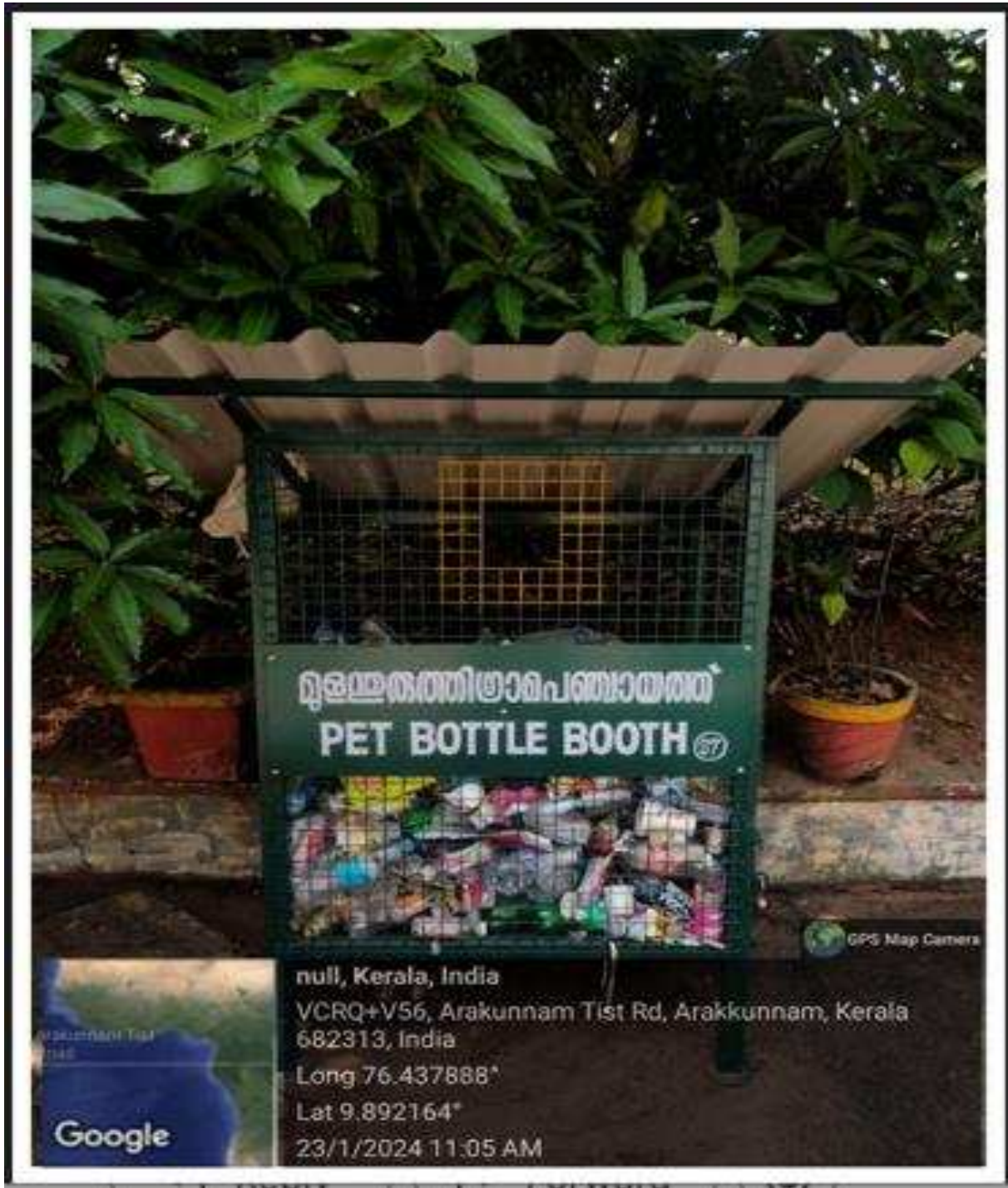
1. Solid Waste Management: TIST ENCON club, aimed at practicing environment protection, keeps separate waste collection bins for the disposal of different types of solid waste. Usage of plastic bags is discouraged within the premises of the college. The conservancy staff collects waste from all the departments and categorizes the waste into degradable and nondegradable. Nondegradable waste are handed over to local bodies. The paper waste is disposed of through vendors.



2.Liquid Waste Management: A sewage disposal system with a capacity of 42m³/day that collects the effluents from the canteen, septage, hostels, and kitchen in a collecting tank and then treating the wastewater in a sewage treatment plant. Wastewater from two biogas plants and wash water from kitchens of boys and girls hostels get collected in the sump tank and is pumped into the reactor tank provided with a bio pack. After filtering water is chlorinated and led into infiltration basin, finally disposed into the ground. A special area of this ground is earmarked for this with a thick plantation.







6.Incinerator: Sanitary napkin destroyer –model MBNF50, which can burn 50 pads at a time.



DETAILS OF WATER CONSERVATION FACILITIES

Sl.No	Topic	Page No.
1.	Rain Water Harvesting	22
2.	Sewage Treatment Plant	22
3.	Drinking Water Delivery System	23
4.	Infiltration Collection Tank	23
5.	Open well recharge	25

1. Rain Water Harvesting

Rainwater from roof tops of buildings spread over an area of 24 acres of land is collected in three tanks having a capacity of 10 to 15 lakhs of Litres each. Tanks are well constructed using reinforced cement concrete and random rubble masonry to prevent the leakage of water. Tanks are also 60cm above the ground level to prevent the ground water flowing into the tank. Another tank of capacity of about 10 lakhs litres water is used for storing the filtered water. Water is filtered using sand filter. Filtered water from the tank is chlorinated before pumping into the drinking water tank. Filtered water is also used for watering the flower and vegetable gardens and for flushing the toilets.



2. Sewage Treatment Plant

The sewage from hostels, canteen, Aryabhata block, Einstein block and Visvesvaraya block are treated at the sewage treatment plant located near the college ground. It acts as a silent champion in our journey toward water conservation. The treated water from the plant is used for watering purposes. The plant ensures that the water once used doesn't become a burden on local resources. The plant's quiet operation mirrors its profound impact, contributing to the preservation of water and exemplifying our college's pledge to build a more sustainable future.



3. Drinking Water Delivery System

At our campus, we bring our drinking water from Thuruthikkara using tanker lorry. This drinking water delivery system using tanker lorry make sure that we have clean and safe water to drink every day. It's not just about having enough water; it's also about being careful with how we use it. By bringing water from another place, we're bringing awareness among students about the importance to save water whenever we can. This way, we're not just taking care of ourselves, but we're also taking care of our environment.



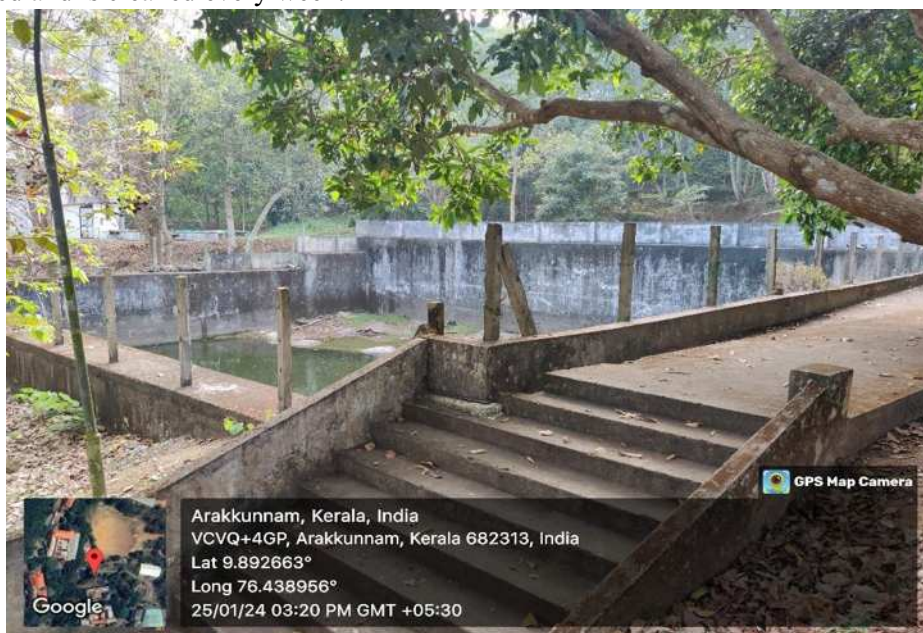
4. Infiltration Collection Tank

An infiltration water collection tank is situated near the Rainbow Bridge at our campus. The tank is placed at the bottom of a hilly slope, so that the water below the ground water table of the slope flows towards the tank situated at the bottom side of slope. To facilitate the flow of water, ducts are also provided. The rainwater can also be stored in these tanks. The excess runoff water flows down the slope and gets accumulated in this tank through pipes. The infiltration collection tanks quietly saves and stores water for us and it's our way of making sure we use water wisely in our college and take care of our environment.



5. Open well recharge /tanks

An Open well present in the campus has a capacity of 1 Lakh litres. Water in the well is used in the campus for all purposes in the campus in addition to panchayath water. The open well is so positioned that it is easily recharged by the runoff water during rains. The open well is well maintained and is cleaned every week.





NATIONAL BOARD OF ACCREDITATION



NAAC



nirf



TUV SUD



ACTE



APJKTU



UGC

Water Tank of 1 Lakh litres capacity is built in college property outside the main campus. Drinking Water supplied by panchayath is collected in the tank and is used for the water requirements of the institution in addition to open well water present in the campus.



DETAILS OF GREEN CAMPUS INITIATIVES

Sl.No	Topic	Page No.
1	Organic Garden at TIST Campus	28
2	Important day celebration World Environment Day World Water Day World Ozone Day Engineer's Day Water Conservation	28
3	Restricted entry of automobiles	31
4	Pedestrian Friendly pathways	32
5	Ban on use of Plastic	33
6	Solar power plant	34
7	Landscaping with trees and plants	35

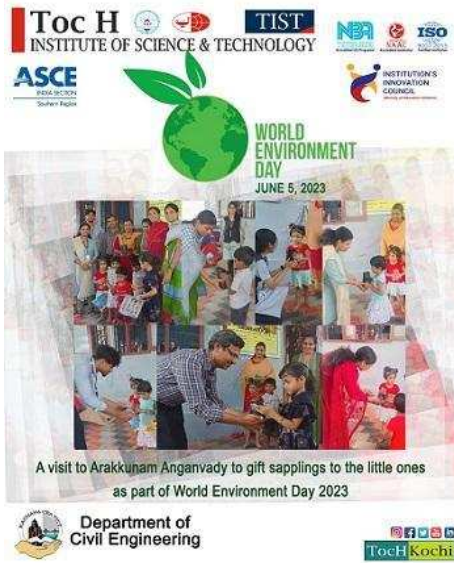
1.Organic Garden at TIST Campus

TIST campus has embraced sustainability with the introduction of an organic garden. This green initiative not only provides fresh, locally sourced produce for the community but also serves as an educational hub for students and faculty to learn about sustainable agriculture. The organic garden at TIST is a testament to the institute's commitment to a greener and more environmentally conscious future.



2.Important day celebration

i) World Environment Day:The Department of Civil Engineering at Toc H Institute of Science and Technology (TIST) consistently observes World Environment Day, showcasing a commitment to sustainability. In 2023, the department visited Arakkunnam Anganwadi, gifting saplings to instill environmental responsibility in young minds. In 2022, a slogan-making competition with IGBC and IIC of TIST promoted environmental awareness. The inaugural 2020 event involved tree planting, symbolizing love for the graduating batch of 2016-20, and the EEE department planted fruit trees.



<https://tistcochin.edu.in/wp-content/uploads/2023/06/WORLD-ENVIRONMENT-DAY-CELEBRATION-2023.jpg>

ii) World Water Day:



March 22nd marks World Water Day, and TIST's Civil Engineering Department takes this seriously. In 2023, bird water feeders ("Jeevajalam") were installed, reinforcing water conservation. In 2022, activities included a technical talk on groundwater and contests, complemented by an organic garden inauguration.

iii) World Ozone Day: World Ozone Day, observed on September 16th each year, serves as a reminder of the importance of protecting the Earth's ozone layer. The Department of Civil Engineering at TIST actively participated in this global initiative in both 2021 and 2022. In 2022, the department celebrated World Ozone Day under the theme "Global Cooperation to Protect Life on Earth." In collaboration with the Institutional Innovation and Entrepreneurship Development Cell (IEDC) and the IIC of TIST, a photography contest was organized to engage students in the global mission to eliminate substances that deplete the ozone layer. The winners, Ms. Veena Biju from TIST and Ms. Tania Breen from St. Philomena's Public School, demonstrated their commitment to environmental protection through their creative submissions. In 2021, the department, in association with the Indian Green Building Council (IGBC), conducted a webinar on "Uncertainties In Numerical Weather Prediction." Dr. Abhilash S, Director of the Advanced Centre For Atmospheric Radar Research at CUSAT, delivered insights into the challenges and uncertainties in predicting weather patterns, emphasizing the critical role of atmospheric conditions in ozone layer protection.

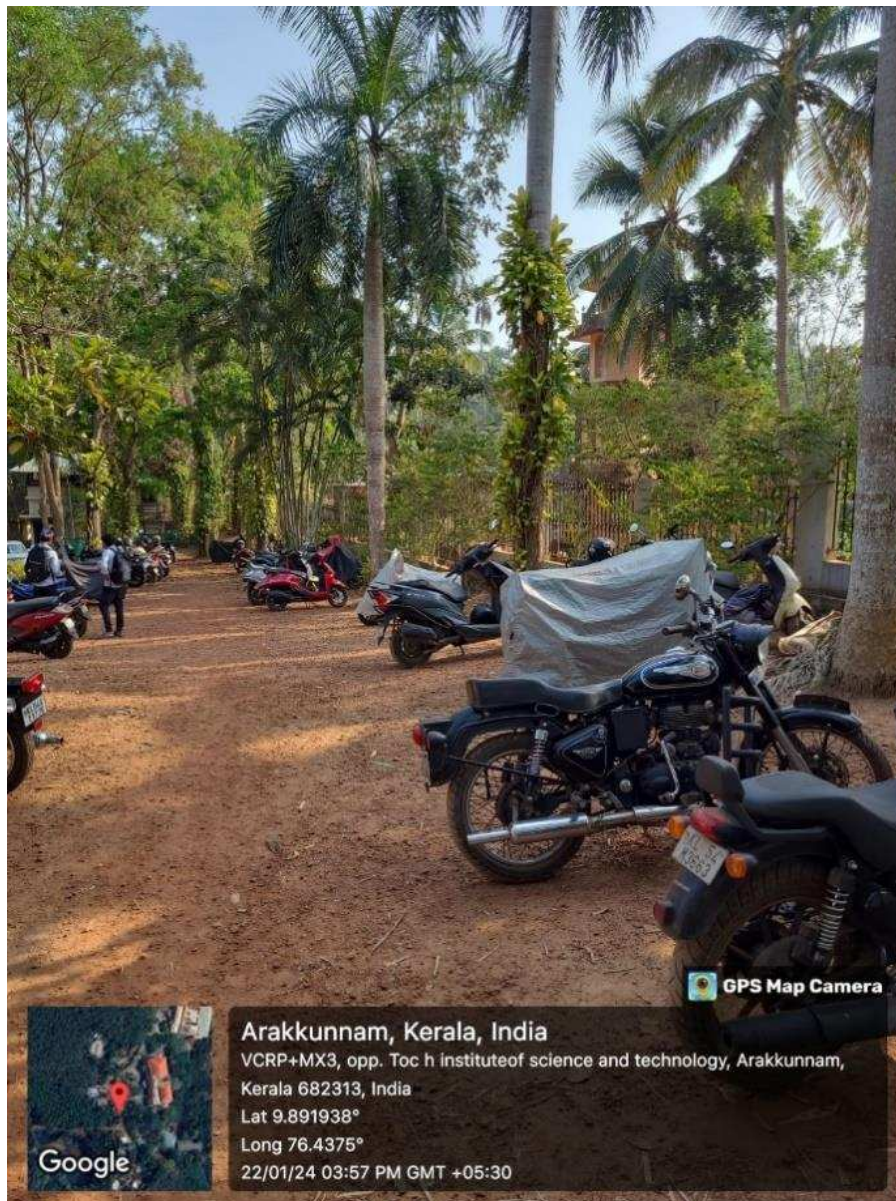
iv) Water Conservation day: Water Conservation - ENCON Fest (2020)* Water conservation took center stage in January 2020, as the Toc H ENCON Club, in association with BPLC Kochi, organized ENCON Fest 2020. With the theme "Save Water, Save Life," the fest aimed to emphasize the vital role water plays on planet Earth. Various contests and events, including a Photography contest, Recycled Product Contest, PPT Presentation, Treasure Hunt, Elocution, Collage Making, Painting, and Quiz Competition, were conducted to engage participants and promote awareness about the importance of water conservation.



3.Restricted entry of automobiles

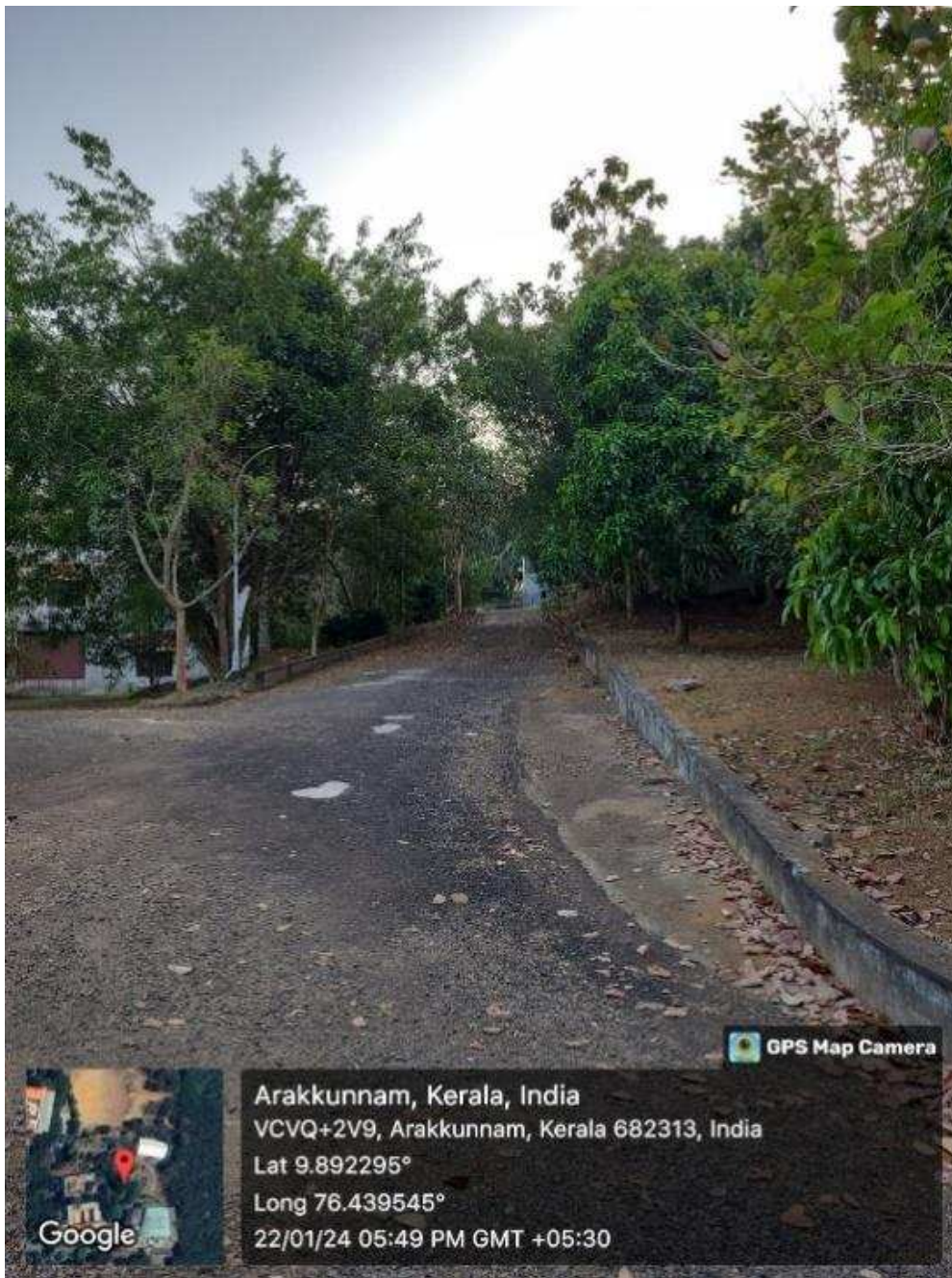
Security persons are entrusted with the task of checking the vehicle at the entrance and then only entry is allowed. Students abide the following rules as mentioned in general code of conduct of the institution. (<https://tistcochin.edu.in/wp-content/uploads/2017/10/GENERAL-CODE-OF-CONDUCT.pdf>)

- a. 2/4-wheeler of the student may be allowed with proper application request for parking the vehicle inside the campus.
- b. Along with the application copy Driving License, RC, Insurance etc
- c. Parking pass stickers issued should be pasted on the vehicle.
- d. Two-wheeler of the student can be only allowed if he / she wears helmet before entering the campus.
- e. The speed limit inside the campus should not cross 10kmph.
- f. Once the vehicle is parked in the parking area assigned, he/she can't move the vehicle during the class hour.
- g. Student should not create sound pollution by raising their vehicle inside the campus.
- h. Only the registered vehicle will be allowed inside the campus, and a student cannot register two vehicle and obtain the parking passes.
- i. The registered vehicle pass owner should not handover his vehicle to his friends.
- j. Every year this process of obtaining a vehicle pass should be repeated.



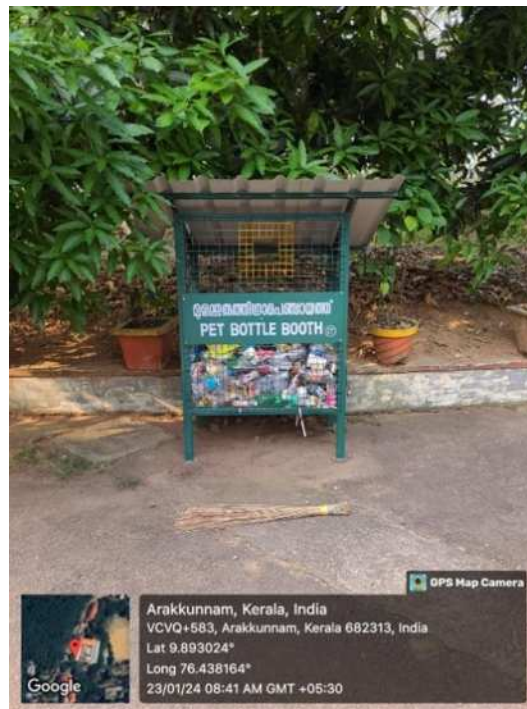
4. Pedestrian Friendly pathways

Campus has sufficient space for parking vehicles of staff and students. Roads inside the campus are well maintained. Pedestrians can walk safely through the campus which is earmarked with zebra lines. Walk friendly pathways to encourage morning walks. Security people are assigned duties on all turns and crossings to the campus.



5. Ban on use of Plastic

Reuse of one -side- printouts is encouraged. Communications inside the campus are channelled via emails and WhatsApp groups. Telephone with intercoms inside the institution helps to avoid communication over papers. Online application process is also entertained for student admissions.



6.ENCON club activity

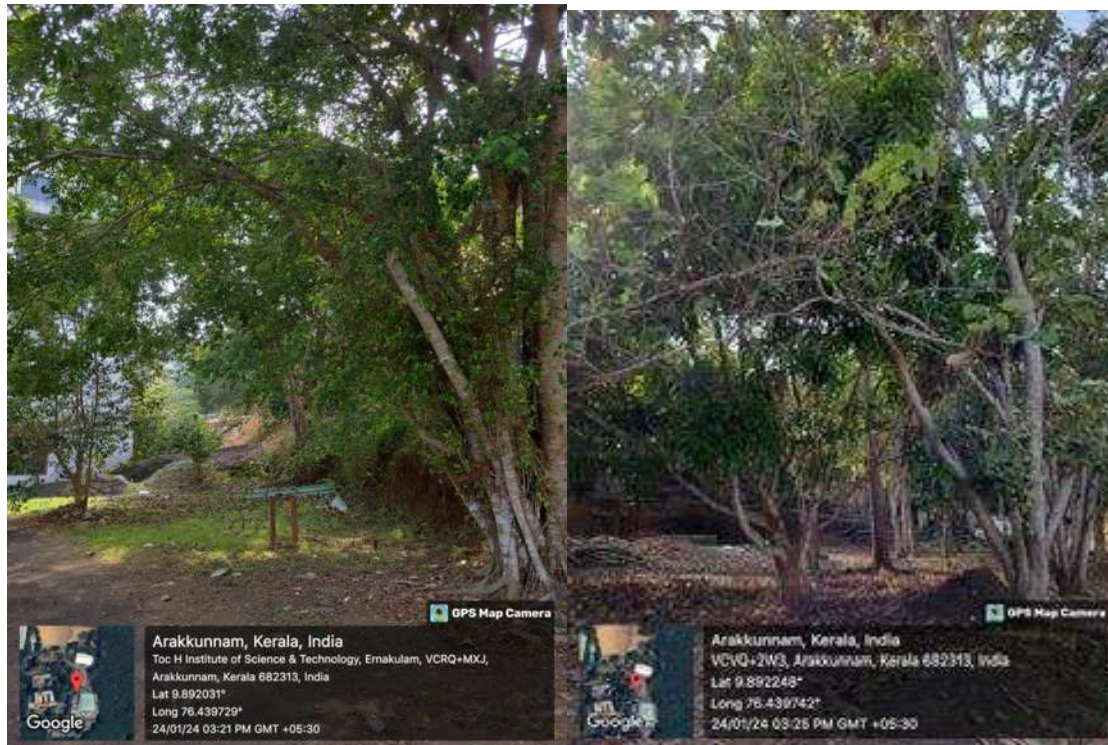
ENCON club is purely a voluntary non-profit group activity aimed at practicing energy conservation and environment protection. This gives a platform for the members to acquire, process and share knowledge on the subject. The main objective of this ENCON club is to drive home the energy conservation and environment protection in the minds of students, by planning and organizing regular activities. Talks, seminars, workshops, exhibition and other awareness programs are undertaken by these clubs every year to spread the message of energy conservation and environment protection. It creates a strong network environment conscious people who would pass on the tradition to generation next. At present there are about 50 BPCL Kochi refinery sponsored ENCON clubs in educational institution across the state of Kerala.



<https://tistcochin.edu.in/eee/association-and-activities/>

7.Landscaping with trees and plants

The scientific names of the trees are displayed on trees which gives an opportunity to discuss the uses of it among the staff and students of the institution. Gardener is appointed to take care of the campus garden.





NATIONAL BOARD OF ACCREDITATION



NAAC



nirf



TUV



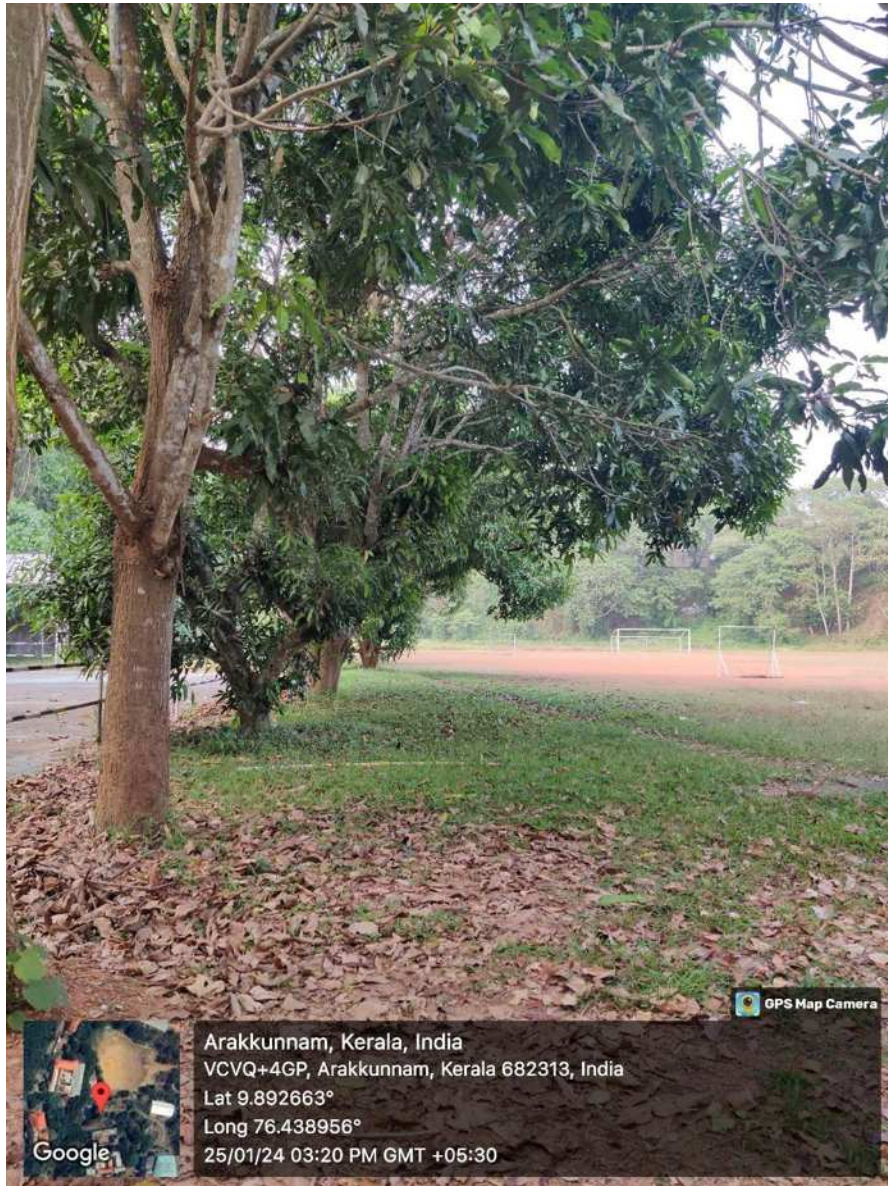
ACTE



APJKTU



UGC



GPS Map Camera



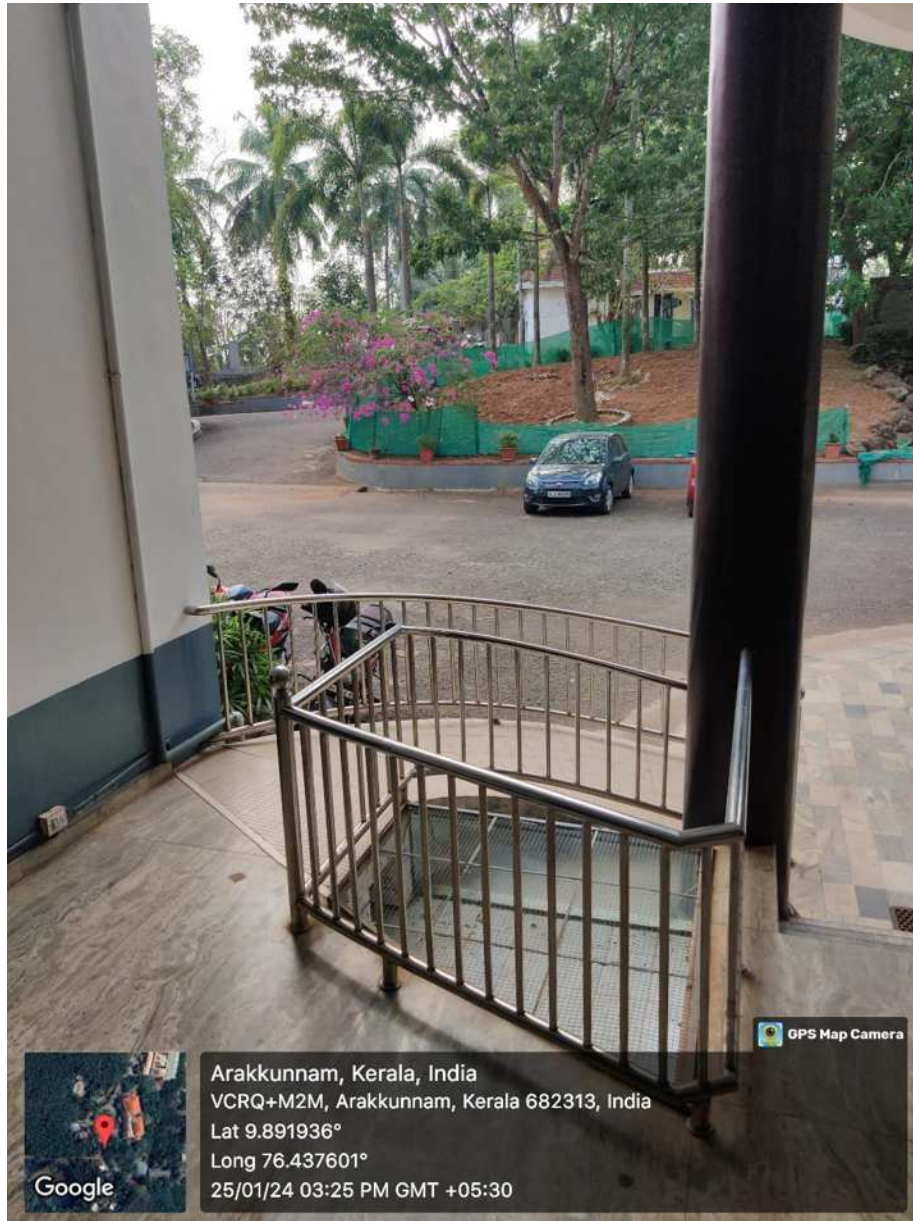
Arakkunnam, Kerala, India
VCVQ+4GP, Arakkunnam, Kerala 682313, India
Lat 9.892663°
Long 76.438956°
25/01/24 03:20 PM GMT +05:30

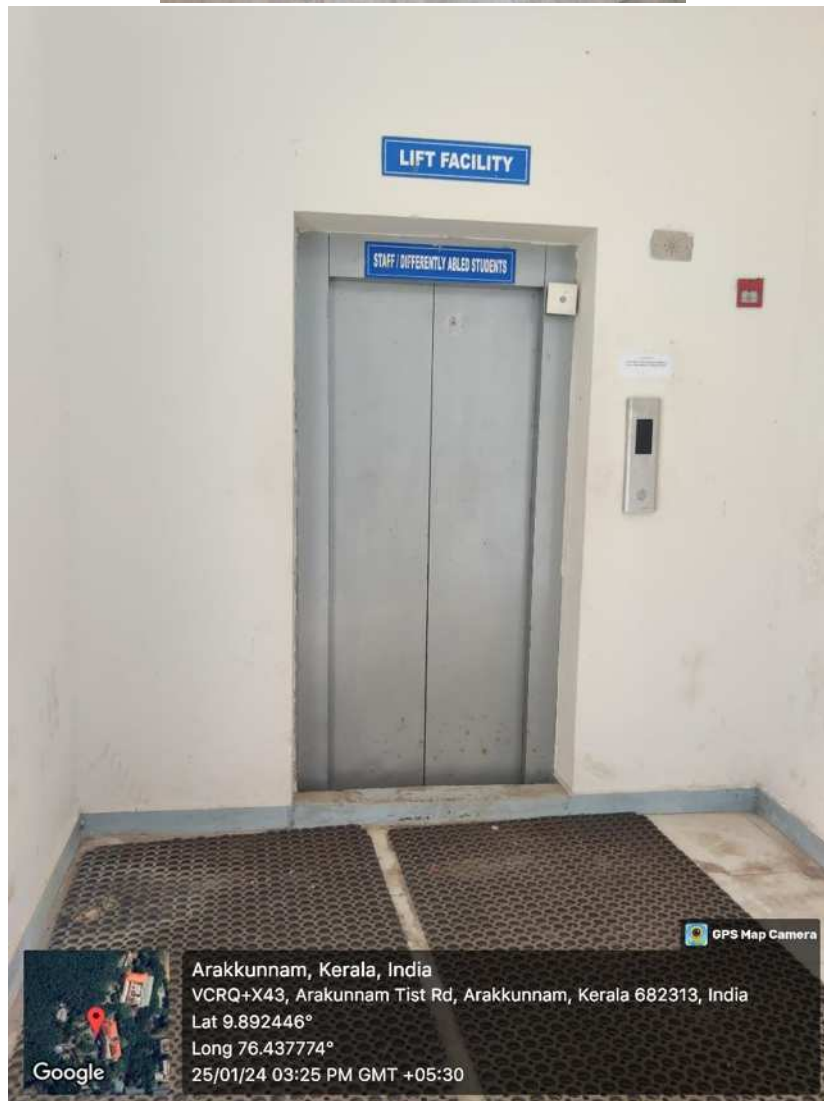
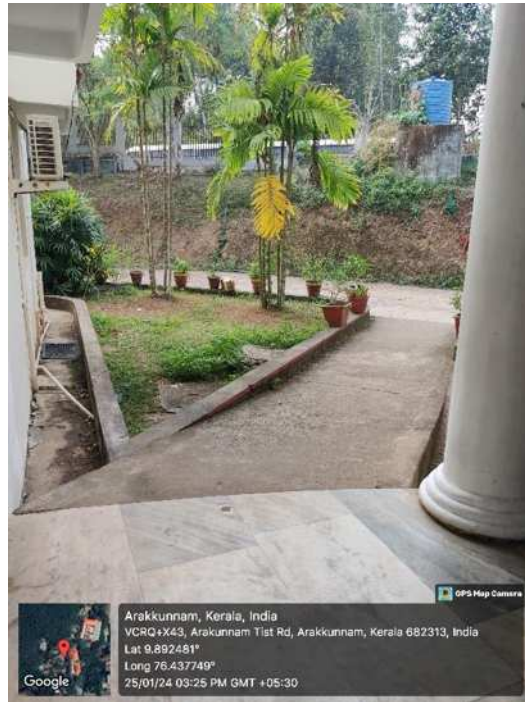


Details of disabled-friendly, barrier-free environment facilities

Sl.No	Topic	Page No.
1	Lift/Ramp	38
2	Disabled-friendly washrooms	40
3	Signage including tactile path, lights, display boards and signposts	41

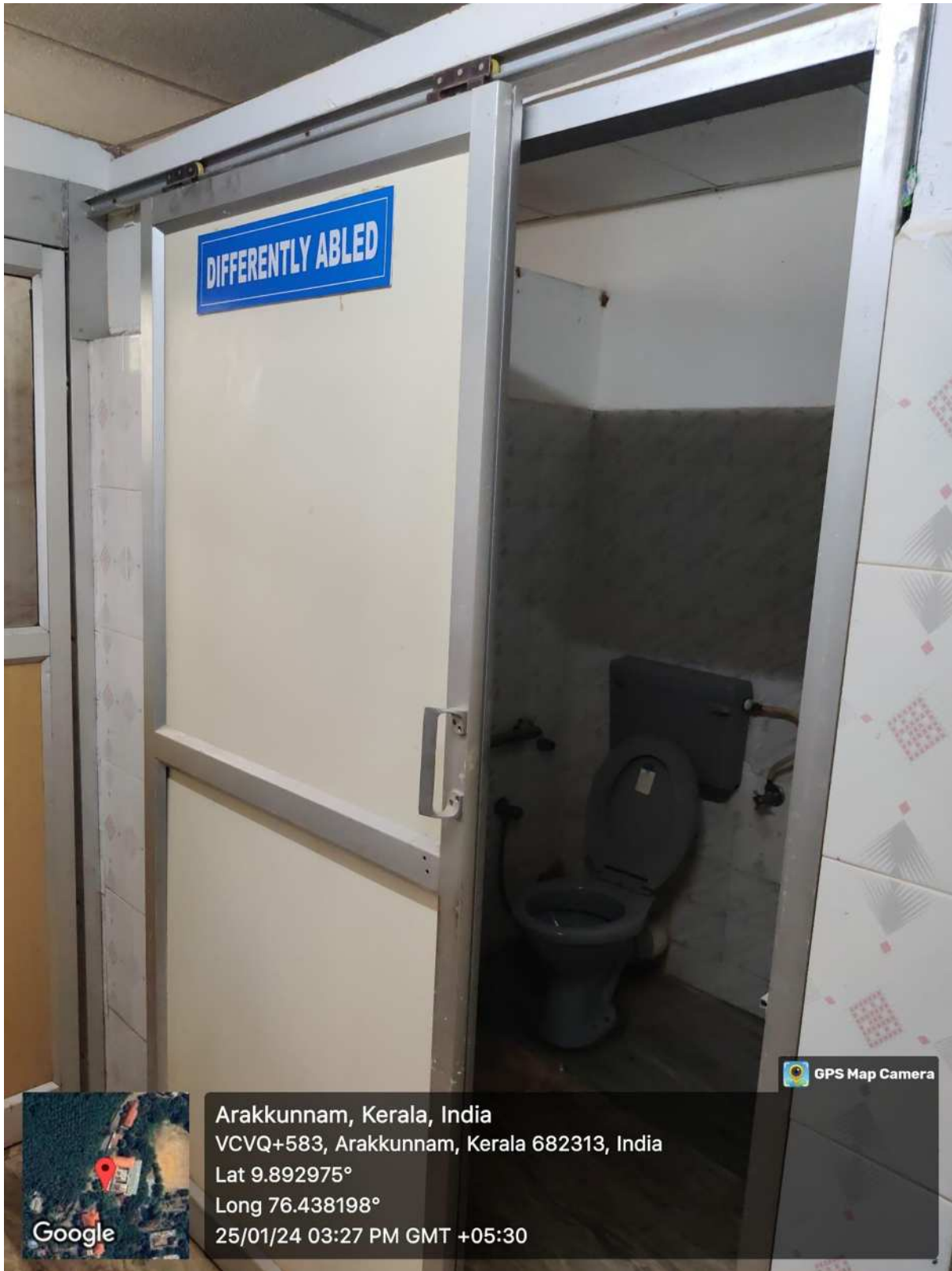
1. **Lift/Ramps:** The institution has a built environment with ramps/lifts for easy access to classrooms. Lift and ramp facility is available in all blocks which is utilized by staff and students.







2.Disabled-friendly washrooms:



3. Signage including tactile path, lights, display boards, and signposts. Sign boards serve as essential guides, providing clear and concise information to students, faculty, and visitors alike. These visual aids are placed throughout the college premises which play a crucial role in enhancing the functionality and navigability of campus. From directing individuals to different departments, classrooms, and facilities to providing important information about events, safety protocols, and campus regulations, they are invaluable tools for communication. In addition to their functional aspects, sign boards also contribute to the aesthetics of campus, adding a visual appeal that complements the overall ambiance.



TIST CONVEYANCE DESTINATION CHART (2022-'23)

BUS NO.20 MAMANGALAM Departure - 7.35 AM	BUS NO. 2 THEVARA Departure-7.30 AM	BUS NO.5 KALOOR Departure-7.35 AM
BUS NO.19 ALUVA Departure-7.20 AM		BUS NO.6 CHERANELLOOR Departure-7.20 AM
BUS NO. 18 VAIKOM-THALAYOLAPPARAMBU Departure - 7.35 AM		BUS NO.8 NJARACKAL Departure-7.00 AM
BUS NO.17 PADIVATTOM-EROOR Departure- 7.35 AM		BUS NO.9 KADUTHURUTHY Departure- 7.00 AM
BUS NO.16 MUVATTUPUZHA Departure-7.50 AM		BUS NO.10 EDAKOCHI Departure- 7.30 AM
BUS NO.15 KOVAPPADAM Departure- 7.20 AM		BUS NO. 11 Departure- 7.30 AM
BUS NO.14 Departure- 7.20 AM	BUS NO.12 Departure- 7.20 AM	GPS Map Camera

Arakkunnam, Kerala, India
VCRQ+X43, Arakkunnam Tist Rd, Arakkunnam, Kerala 682313, India
Lat 9.892365°
Long 76.43772°
20/01/24 09:19 AM GMT +05:30

Google

VISVESVARAYA BLOCK

GPS Map Camera

Arakkunnam, Kerala, India
VCRQ+JWH, Arakkunnam, Kerala 682313, India
Lat 9.89146°
Long 76.439842°
20/01/24 11:38 AM GMT +05:30

Google