

**Shri. Annasaheb Dange College of Engineering and Technology,
Ashta.**

**A report of
Environmental Audit**



M H Mota

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Preface

This report presents the findings of an environmental audit conducted at the Annasaheb Dange College of Engineering and Technology. The audit was conducted with the aim of identifying areas where the institute could improve its environmental performance and reduce its impact on the environment.

The audit was carried out by a team of environmental experts, who examined various aspects of the institute's operations, including waste management, water consumption, and other relevant aspects.

The findings of the audit are presented in this report, along with recommendations for actions that the institute can take to improve its environmental performance. The recommendations take into account the institute's unique circumstances, including its size, location, and operations.

We would like to express our gratitude to the staff and management of the institute for their cooperation and assistance during the audit process. We hope that this report will provide useful insights and guidance for the institute as it seeks to enhance its environmental performance and contribute to a more sustainable future.

Finally, we would like to acknowledge the support of all those who contributed to the completion of this report. Without their hard work and dedication, this project would not have been possible.



TABLE OF CONTENTS

Sr. No.	<u>PARTICULARS</u>	Page No.
1.	INTRODUCTION:	01
	1.1 Introduction about campus	01
	1.2: Need for Environment Auditing	02
	1.3: Goals of Environment Audit	02
	1.4: Objectives of Environment Audit	02
	1.5: Benefits of Environment Audit to Educational Institutions	03
2.	EXECUTIVE SUMMARY	04
3.	SOLID WASTE MANAGEMENT SYSTEMS	05
4.	WASTE WATER MANAGEMENT	09
5.	WATER MANAGEMENT:	10
6.	E-WASTE MANAGEMENT	13
7.	MAINTENANCE OF BIODIVERSITY and AIR QUALITY	14
8.	CONSTRUCTION OF TANKS AND BUNDS	15
9.	SUMMARY	16
10.	Annexure A	17
11.	Annexure B	18



1. INTRODUCTION:

A nation's development begins with its educational institutions, where ecology is regarded as a primary determinant of development related with the environment. Educational institutions are becoming more environmentally conscious, and new innovations are being implemented to make them more environment - friendly. Several educational institutes use various perspectives to handle their environmental challenges on campus, such as promotion of energy savings, waste recycling, water reduction, water harvesting, and so on. College activities can have a wide range of negative environmental consequences. Environmental auditing is the practise of comparing an organization's environmental performance against its environmental policies and objectives. Environment audit can be defined as systematic identification, quantification, recording, reporting and analysis of components of university environment. The environment audit aims to analyze environmental practices within and outside the institute campuses, which will have an impact on the ambient environment. It was initiated with the motive of inspecting the effort within the institutions whose exercises can cause threat to the health of inhabitants and the environment.

1.1 Introduction about campus:

The campus of the Annasaheb Dange College of Engineering and Technology (ADCET) is located in Ashta city in Sangli district of Maharashtra state. There are eight departments and hostels of residence for the students. Hence, total strength of campus including students and staffs will be more than 3,000 and its still under the expansion project adding more number of students and faculty. Lots of new departmental building and infrastructures are under construction. The state experiences the three seasons in year. The Sangli is located around latitude 16° 51' 6" N and 74° 33' 36" E longitude. This region falls in semiarid tract of Deccan plateau. In Ashta, the wet season is warm, oppressive, windy, and overcast and the dry season is hot and partly cloudy. The rainy period of the year lasts for 6.5 months, from April 30 to November 15, with a sliding 31-day rainfall of at least 0.5 inches. The month with the most rain in Ashta is July, with an average rainfall of 9.3 inches. The rainless period of the year lasts for 5.5 months, from November 15 to April 30. (<https://weatherspark.com/y/107887/Average-Weather-in-Ashta-India-Year-Round>).



The ADCET campus occupies the area around 28 acres in Ashta city. It includes office building, several departments, library building and hostel for both boys and girls.

1.2: Need for Environment Auditing

Environment auditing is the process of identifying and determining whether institutions practices are eco- friendly and sustainable. Traditionally, we are good and efficient users of natural resources. But over the period of time excess use of resources like water become habitual for everyone especially, in common areas. Now, it is necessary to check how carefully we are handling the natural and anthropogenic resources. Environment audit regulates all such practices and gives an efficient way of natural resource utilization. In the era of climate change and resource depletion it is necessary to verify the processes and convert it in to green and clean one. Environment audit provides an approach for it. It also increases overall consciousness among the people working in institution towards an environment.

1.3: Goals of Environment Audit

Institute has conducted an environment audit with specific goals as:

1. Identification and documentation of environment practices followed.
2. Identify strength and weakness in environment practices.
3. Analyze and suggest solution for problems identified.
4. Assess facility of different types of waste management.
5. Increase environmental awareness throughout campus.
6. Identify and assess environmental risk.
7. Motivates staff for optimized sustainable use of available resources.

1.4: Objectives of Environment Audit

The major objectives of the environmental audit are as follows...

1. To examine the current practices, which can impact on environment such as of resource utilization, waste management etc.
2. To identify and analyze significant environmental issues.
3. Setup goal, vision, and mission for environment practices in campus.
4. Establish and implement Environment Management in various departments.



1. **Identify the main components of the accounting cycle.**

2. **Explain the difference between debit and credit.**

3. **Describe the process of journalizing and posting.**

4. **Discuss the importance of the trial balance.**

5. **Explain the concept of the accounting equation.**

6. **Describe the process of adjusting entries.**



2. EXECUTIVE SUMMARY

An environmental audit is a snapshot in time that evaluates campus compliance with applicable environmental laws and regulations. Though a useful benchmark, the audit quickly becomes obsolete unless a mechanism is in place to continue the work of monitoring environmental compliance. The major focus of this audit is to tap the opportunities in following...

- Waste Minimization and Recycling
- Greening
- Energy Conservation
- Water Conservation
- Clean Air
- General Practices

This audit report includes observations and recommendations for increasing environmental awareness.

Facilities available in the institute:

- ✓ Garden area
- ✓ Play ground
- ✓ Kitchen
- ✓ Toilets
- ✓ Garbage Or Waste Store Yard
- ✓ Laboratories
- ✓ Canteen
- ✓ Hostel Facility
- ✓ Guest House
- ✓ ATM of IDBI bank
- ✓ Ample parking facilities for students/ staff and visitors
- ✓ Local bus station... within 1 km from main entrance of the institute



3. SOLID WASTE MANAGEMENT SYSTEMS

ADCET is committed to managing its solid waste in an environmentally responsible manner, in accordance with all applicable laws and regulations. The institution promotes waste reduction, reuse, and recycling, and takes efforts to minimize the generation of solid waste through source reduction and other waste reduction strategies. The institute generates varieties of solid waste. The major components observed includes paper waste, Canteen food waste, plastic waste and horticulture Waste. In institute the biomedical and radioactive waste is not generated.

Good amount of cleaning staff is appointed by the institute for daily housekeeping and proper collection of solid waste generated. All key locations are provided with proper dust bins to keep every part of campus litter free.



Fig. 1a: Dustbins kept at all key locations



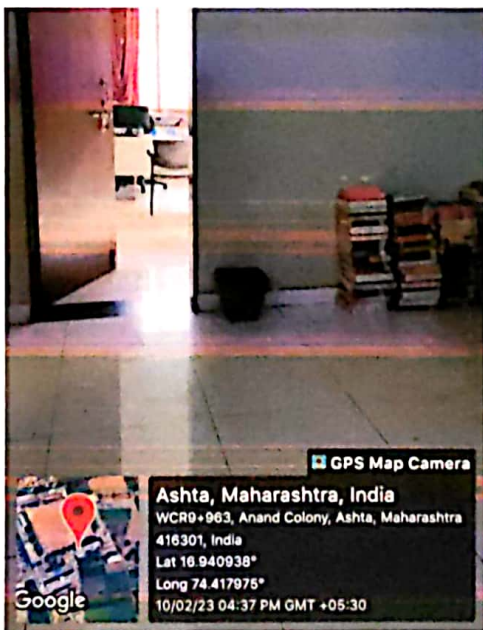
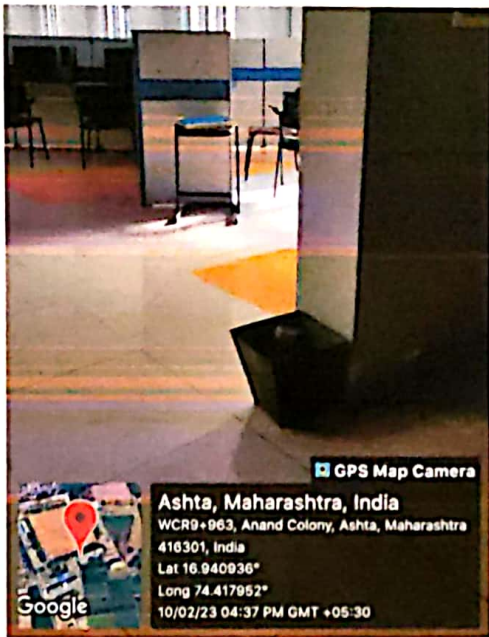


Fig.1b: Dustbins kept at all key locations



Waste management practices:

1. Recycling of horticulture waste:

Composting pits are provided in campus back side of library building and Civil engineering department. Horticulture waste is further treated in the campus using the vermin composting method in these composting pits and soil conditioner is produced, which is then utilised for the gardening in the campus.

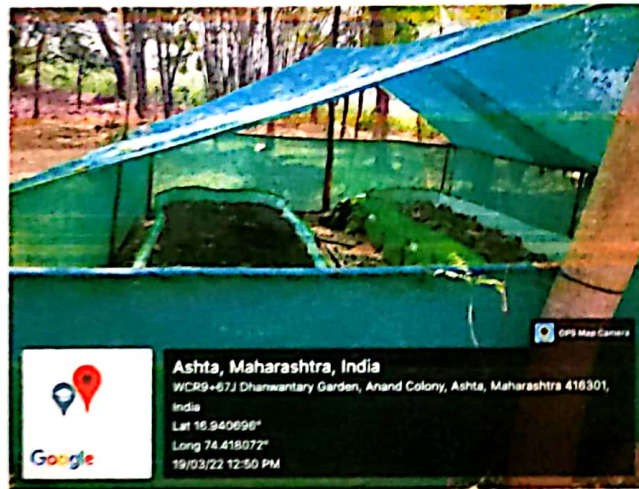


Fig 2: Composting pits available in the campus

2. Supporting daily waste discharge in collection system run by local municipal authorities:

The waste collection vehicle operated by Ashta municipal authority is daily visiting the institute for the collection of solid waste generated by day to day activities, excluding above mentioned waste. This not only results in appropriate waste disposal but also helps to manage such waste in more sanitary manner.





Fig 3: Waste collection cart, collecting waste from ADCET campus

3. Disposal of used answer sheets of students:

Institute has also signed the MoU with 'Sanjay Kumar and company, Madhavnagar, Sangli' who is purchasing all paper waste generated in the office of 'Controller of Examination' in the form of answer sheets of students to dispose of in sustainable manner by recycling the same for pulping. (Annexure B)

4. Reusing single side printed papers printout papers:

Reuse of one side printed papers for internal communication and various minor works during various academic activities and events.



4. WASTE WATER MANAGEMENT:

Institute is committed to managing its liquid waste in a responsible and sustainable manner, in accordance with all applicable laws and regulations. The institution will continuously strive to reduce the amount of liquid waste generated and to properly dispose of all liquid waste generated on campus.

The institute has developed good underground pipe system for the collection of waste water as well as storm water generated during the monsoon season. The water is disposed in the sustainable way. The institute has implemented a variety of disposal methods to properly dispose of its liquid waste, in accordance with all applicable laws and regulations. These methods may include:

Sewer discharge: Liquid waste from canteen is discharged into the sewer system for treatment at a municipal wastewater treatment plant.

Recycling: part of the waste water is recycled, in the form of allowing to reach to the agricultural fields located on the south side of the campus for irrigation. The waste from the hostels is primarily treated by septic tanks and then allowed to percolate in the ground in the form of soil percolation systems.

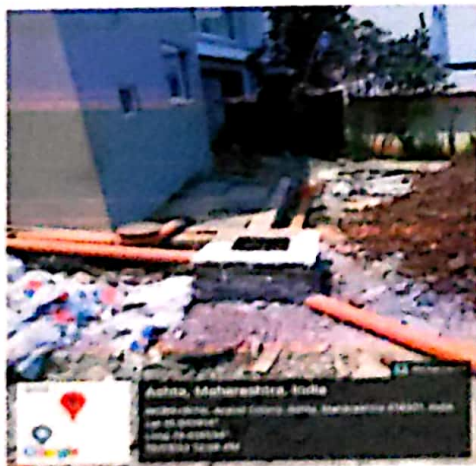


Fig 4: Waste water collection system



Fig 5: Waste water treatment facility in the campus

5. WATER MANAGEMENT:

Water is valuable natural resource and its appropriate use and conservation is of paramount significance. The main source of the water for ADCET are ground water in the form of bore-well and water extracted from 'Warana River'. At present there are 03 bore-wells. The water from river Warana is delivered in the well (Fig.6), which is covered to avoid the entry of any undesirable foreign matter, from where it is treated and distributed in the campus. The layout of the pipes is presented in fig.7.

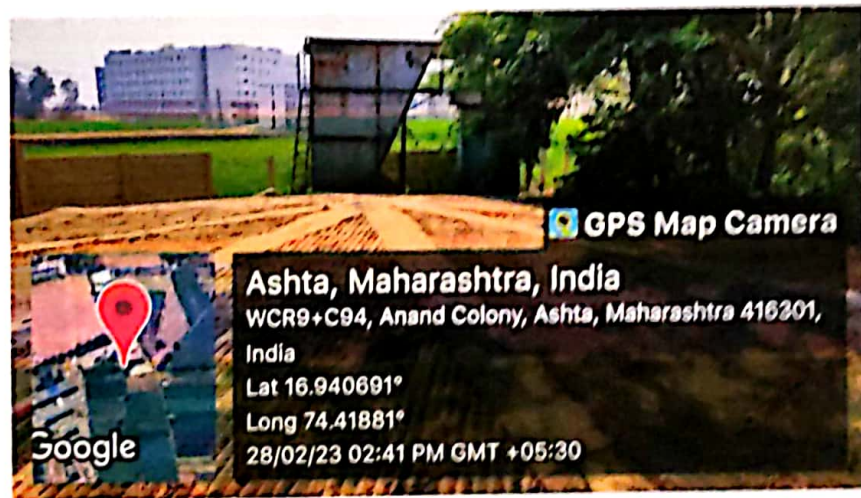


Fig 6: Well covered with GI sheets.

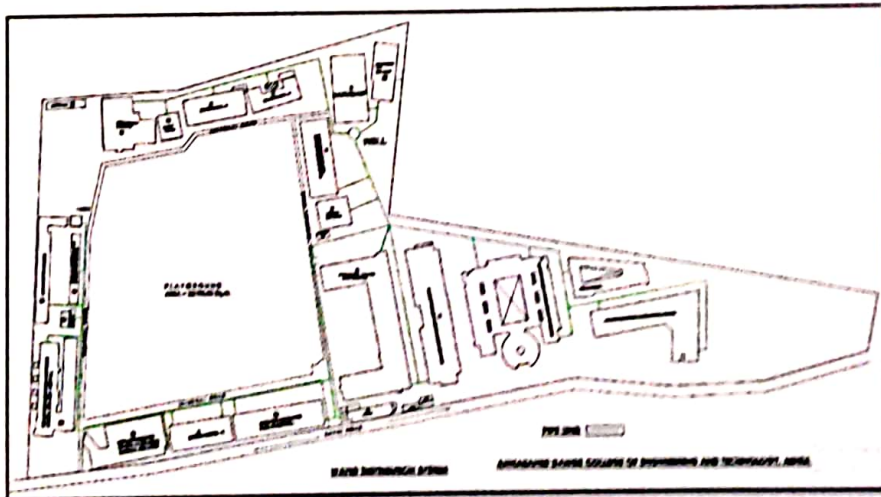


Fig 7: Layout of distribution network of pipes



To support the water conservation, the campus is well equipped with the facility of rain water harvesting for majority of buildings. The details of such system is provided in separate report of rain water harvesting.

Entire ADCET campus distribution system is well supervised by Civil works committee to ensure that there are no leakages and wastages of precious water through joints, valves etc. Waste usage of water is reduced using low pressure flushes. Periodic maintenance of water cooler and RO systems are monitored.

The consumption of contaminated water leads to adverse health effect of consumer. To insure the safe, clean water provisions the campus has provided the RO water treatment. The regular monitoring and up keeping of the facility is practiced.



Fig 8.1: R.O. treatment plant for the campus (location: above Civil Engineering Department)





Fig 8.2: R.O. treatment plant for the hostel (location: above Ladies hostel)

As a part of public awareness, especially for farmers a special laboratory is developed by the Civil Engineering department, titled 'Micro-irrigation laboratory.' This is potential step for creating the awareness among the major community around the campus as a sustainable water use for agriculture use.



Fig 9: Micro-Irrigation lab, Department of Civil Engineering



6. E-WASTE MANAGEMENT:

Being a technical institution, ADCET generates small amount of E waste. E-waste generated in the campus is disposed in scientific and eco-friendly manner. Drives of E waste collection are also conducted for sustainable management of such waste. The research on such waste management are also initiated by the institute.

Sant Dnyaneshwar Shikshan Sanstha's
Annasaheb Dange College of Engineering and Technology, Ashta.
 An Autonomous Institute

National Service Scheme
 Department of Electrical Engineering

E-Waste Collection & Donation

Date: 11/11/2022 & 14/11/2022
 Venue: ADCET, Ashta.

Dr. Piyush Chandak
 NSS Coordinator

Prof. S. B. Hivarekar
 Dean Administration

Dr. Vikram S. Patil
 Director, ADCET

Prof. R.A. Kanai
 Executive Director, SDSS

Adv. R.R. Dange
 Secretary, SDSS

Fig 10: Details of activity of E waste collection



7. MAINTENANCE OF BIODIVERSITY and AIR QUALITY

The conservation and maintenance of biodiversity is very to balance the nature. The campus of ADCET is the vibrant follower for such practices. The campus supports varieties of trees. It also has provided the botanical garden to support the diversity. Total more than 1140 plants are available in the campus. The details of the same is attached in annexure 1. This step is also helping to support and conserve variety of small animals and birds. This has achieved to neutralize the CO₂ and maintain the air quality.



Fig 11: Varieties of plants available in campus

The initiatives like ‘No vehicle day’ in campus are also taken when the vehicles are not allowed to enter the campus. (Once in a month, on every 4th/5th Saturday)

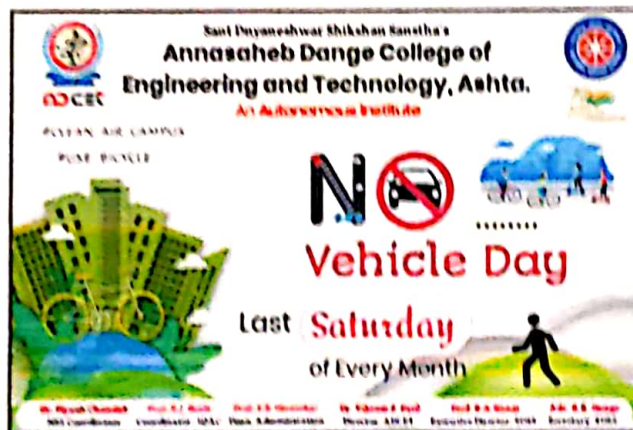


Fig 12: 'No Vehicle Day' in Campus



8. CONSTRUCTION OF TANKS AND BUNDS

Water is coming from 'Warana River' and separate water connection is there up to college campus. The sump tank is having dimensions 15x12x 3.5m. The earthen bunds are also constructed at required places to check the runoff and soil loss during the incidence of heavy rain.

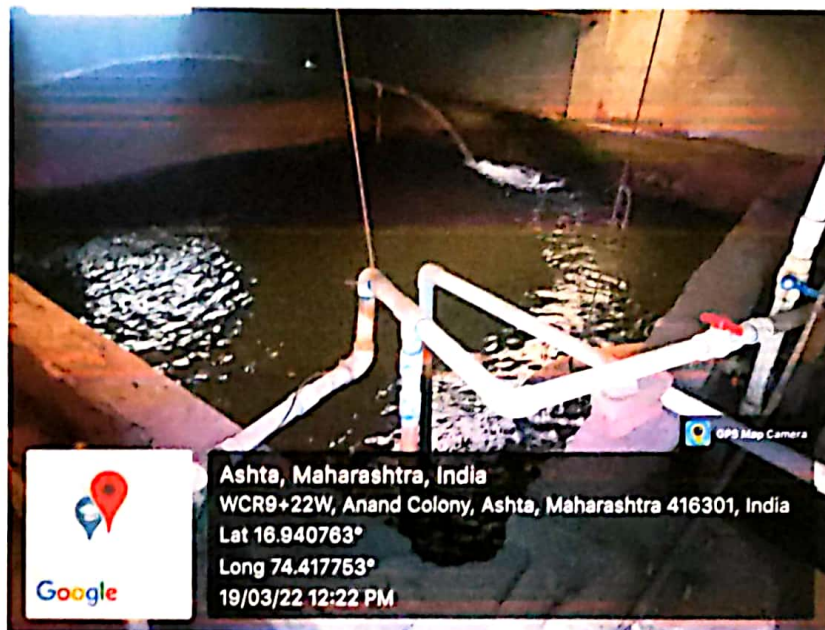


Fig 13: Construction of tank to store water



Fig 14: Earthen bunds to control soil erosion

9. SUMMARY

Environment Audit is one of the important tools to check the balance of natural resources and its judicious use. Environment auditing is the process of identifying and determining the eco-friendly and sustainable institutional practices. It is a process of regular identification, quantification, documenting, reporting and monitoring of environmentally important components in a specified area.

'Annasaheb Dange College of Engineering and Technology' has conducted the "Environment Audit" in the academic year 2022-23. The main objective to carry out this audit was to identify the green practices followed by ADCET and to conduct a well-defined audit report to realize the track ADCET is playing as the part of the sustainable development. From the report it can be concluded that at ADCET we are confidently committed for the Eco-friendly and sustainable practices. Though the quantification of the impact of practices, particularly solid waste generation and its management will be the next proposed step.



Annexure A

Details of plants available in the campus:

Garden Name	Total Plants
Charak Medicinal Plant Garden	319
Sushrut Medicinal Plant Garden	193
Dhanavantari Medicinal Plant Garden	53
Waghbhatta Medicinal Plant Garden	397
Medicinal Plant in Pots	130
Nakshatra, Rashi, Navagraha Garden	48
Total Plants	1140



Annexure B

Contract between ADCET and Sanjay Kumar and Company, Madhavnagar, for recycling of paper

