



सत्यमेव जयते

## Forests and Environment Department

November'2022

# Final Report on GREEN AUDIT of Dhirubhai Ambani Institute of Information and Communication Technology (DAIICT)

Issue GEMI/GA/683(7)/29/2022



**Gujarat Environment Management Institute (GEMI)**

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(ISO 9001:2015, 14001:2015 & 45001:2018 Certified Institute)

*"We Provide Environmental Solutions"*



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## Chapter : 4

# Methodology Used For Carrying Out Green Audit

The study methodology is a key aspect of planning and successful execution of the audit. It aids to monitor the status and progress of the work and helps to arrange necessary resources and requisites accordingly. The following methodology was adopted by GEMI for carrying out the Green Audit for educational institutions.

<b>1. Pre Audit</b>	<ul style="list-style-type: none"> <li>➔ To plan audit</li> <li>➔ To select audit team</li> <li>➔ To acquire background information</li> <li>➔ To arrange preliminary site visit</li> </ul>
<b>2. On-Site Audit</b>	<ul style="list-style-type: none"> <li>➔ To understand scope of audit</li> <li>➔ To analyze the strengths and weaknesses of the internal controls</li> <li>➔ To conduct audit</li> <li>➔ To evaluate observations of audit</li> </ul>
<b>3. Post Audit</b>	<ul style="list-style-type: none"> <li>➔ To finalize audit report from the observations and the inference drawn with accuracy</li> </ul>

Thus, the Green audit process classified into 3 major tasks i.e. Pre audit activities, On-Site audit activities and Post audit activities.

### a. Pre-Audit

#### ➔ Acquisition of background information about the organization.

Background information have been collected from the organization based on the prescribed checklist.

#### ➔ Planning of the audit.

The audit was planned according to the categories of Green audit.

#### ➔ Selection of audit team.

The audit team was selected and finalized as per requirement of the audit and expertise.

#### ➔ A preliminary visit to the site.

After acquisition of background information, a preliminary site visit was conducted on 10/06/2022 to verify the acquired information and for further proceeding of the audit. The photographs of the visit are shown in Figure 2.



*Figure 2 Preliminary Visit of Campus of DAIICT*

## **b** **On-site Audit**

### ➔ **Understanding the scope of the audit.**

Scope was defined on the basis of preliminary site visit conducted during pre-audit stage and finalized based on the environmental conditions of the organizations.

### ➔ **Execution of the audit.**

During the execution of the audit, data and documents of various aspects of environment, health and safety have been verified and accordingly observations have been made, which have been included in Chapter-5. To check the environmental conditions of the campus, the monitoring of water, wastewater, and soil was carried out on 06/07/2022 and noise level monitoring was carried out at three different buildings (New Boys Hostel, Resource Centre, Laboratory Block) during July 04- 06, 2022. Air monitoring was carried during October 13-14, 2022. A map showing sampling locations is given as Figure 3. Figure 4 to 8 shows the photographs of the



Figure 3 Monitoring Locations in DAIICT Campus





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Figure 4 Water Sampling

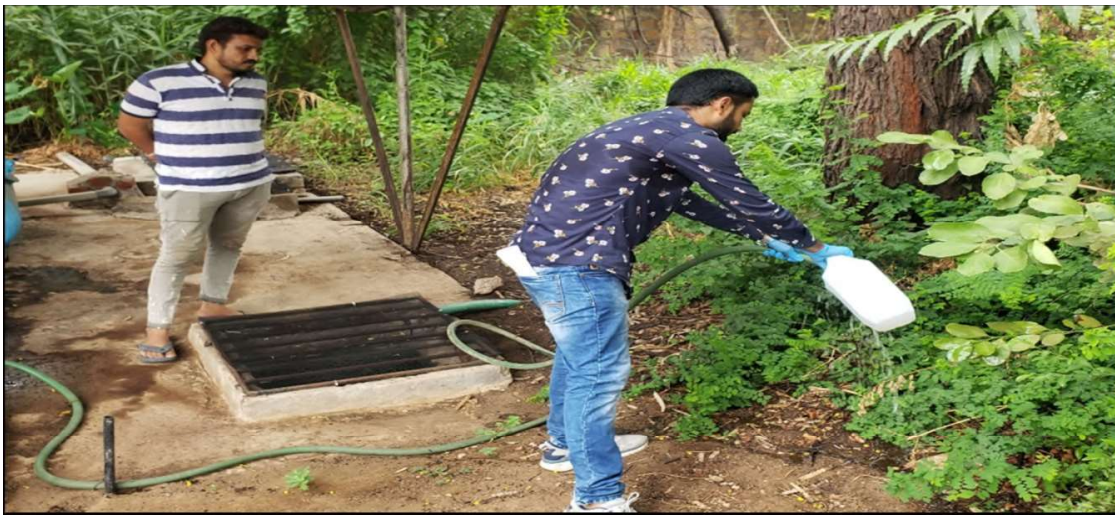


Figure 5 Wastewater Sampling



Figure 6 Ambient Air Monitoring near Canteen Area





*Figure 7 Soil Sampling*



*Figure 8 Noise Monitoring carried out at Resource Centre*

### ➔ **Evaluation of the observations made in the audit.**

The observations have been evaluated as per quality check, which are required to be maintained for each category to have sustainable environment for students, teaching staff as well as working staff.



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## Chapter : 5

### Green Audit Assessment Findings, Suggestions and Actions

The Green audit of DAIICT campus has been carried out based on the information provided by the Institute. Further, to audit various aspects such as Water, Wastewater, Waste Management, Energy Saving, Environmental Quality, Green Cover, Carbon Accounting, Health, Hygiene and Food, Environmental Awareness, visits to the campus were carried out. The quality of environmental components has been assessed by carrying out their monitoring that includes water quality monitoring, noise monitoring and soil quality monitoring.

#### 5.1 General assessment

<b>Name of the College</b>	Dhirubhai Ambani Institute of Information and Communication Technology, Gandhinagar
<b>Location:</b>	Reliance Cross Road, O/p. National Institute of Design (NID), Gandhinagar, Gujarat-382007.
<b>Month and Year of Establishment:</b>	2001
<b>No. of students enrolled:</b>	Boys : 1032 Girls : 436 New Students : 476 Total Students : 1944
<b>Number of Staff in college:</b>	Faculties : 66 Staff Members : 59
<b>Date of walk-through:</b>	10/06/2022 & 06/07/2022

## 5.2 Water Audit

### 5.2.1 Water Assessment

Checklist	Response
Source of water	Bore well
Raw water requirements for various usages	An estimated water requirement as per National Building Code, 2016 for the Institute is about 230.4 KLD, the detailed calculation of which is given in <b>Annexure - I</b>
Analysis Report of Raw Water	Refer <b>Annexure - II</b>
Analysis Report of Drinking Water	Refer <b>Annexure - III</b>
Analysis Report of Treated Sewage	Refer <b>Annexure - IV</b>
Water consumption	450 KLD as per the data provided
Technologies conservation being used for water	Water level sensor system has been installed with overhead tanks to prevent wastages from overflow

The quality of raw water and R.O. water as per the laboratory analysis is shown in Table 1.

**Table 1 Quality of Raw Water and RO Water**

Sr.	Parameter	Unit	RO Water	Raw Water	Drinking Water Standards IS 10500:2012
<b>Physico-chemical</b>					
1.	pH	-	8.49	7.92	6.5-8.5
2.	Colour	Hazen	5	5	5
3.	Turbidity	NTU	1	1.7	1
4.	Chloride as Cl <sup>-</sup>	mg/L	8	119.96	250
5.	Total Hardness	mg/L	2	130	200
6.	Calcium Hardness	mg/L	BDL* (DL=1)	80	200
7.	Magnesium Hardness	mg/L	1.5	50	200
8.	Alkalinity	mg/L	21	409.5	200
9.	Total Dissolved Solids	mg/L	36	612	500
10.	Fluoride	mg/L	BDL* (DL=0.3)	1.145	1
11.	Sulphate	mg/L	BDL* (DL=10)	43.67	200
12.	Nitrate	mg/L	2.39	28.56	45
<b>Microbiological</b>					
13.	Detection and enumeration of coliform bacteria	CFU/100 ml	80	--	Shall not be detectable in any 100 ml sample

\*BDL= Below Detection Limit, DL=Detection Limit

### 5.2.2 Observations

During the field visit, no leakage/dropping was observed in pipeline/taps. The Institute has provided non-concussive taps for drinking water for conservation of water. For any problem related to plumbing and sanitary works, an in-house maintenance team is kept available for 24X7 hours.



Figure 9 Drinking Water



Figure 10 Water Cooler

- ➔ The Institute extracts raw water from bore well and stores in raw water storage tank, for which a log book (Annexure-V) for consumption of water is maintained.
- ➔ The Institute has total water storage capacity of 400 KLD (4 Storage tank, each of 1 Lakh Litres Capacity).
- ➔ The storage is adequate in accordance to the water requirement of 230.4 KLD.