

ICFAI Foundation for Higher Education,
Hyderabad
GREEN AUDIT REPORT



ela

Design Certification Training

Ela Green Buildings
& Infrastructure
Consultants Pvt. Ltd.



S. V. Jayalakshmi
REGISTRAR
ICFAI FOUNDATION FOR HIGHER EDUCATION
(Deemed-to-be-University establishes under section 3 of UGC Act 1956.)

For Ela Green Buildings & Infrastructure Consultants Private Limited,

Sriram Krishnamurthy, Certified Energy Auditor (EA-30994)

51, Officers Lane, Cantonment, Pallavaram, Chennai - 600043



CERTIFICATE

This is to certify that **The ICFAI Foundation for Higher Education, Hyderabad** has conducted Green Audit for their campus and has submitted necessary data & credentials for scrutiny for the period, June 1, 2020-May 31, 2021. The activities and measures carried out the by the University have been verified and was found to be **satisfactory**. The efforts taken by the faculty & students towards keeping the campus clean and green is highly appreciated and commendable.

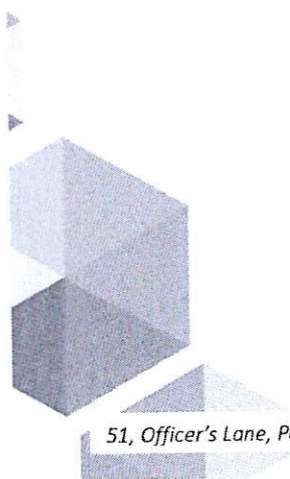
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15-06-2021



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Title	ICFAI Foundation for Higher Education, Hyderabad
Consultant	Ela Green Buildings & Infrastructure Consultants Pvt. Ltd.
Year	15 June 2021
No. of Pages	25

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About Us

We are a one-stop solution for all your sustainability, green design, and energy-efficiency needs. With more than ten years of experience in sustainability & energy industry, we offer holistic turnkey solutions for making your project truly sustainable.

Team

An enviable mix of multi-disciplinary team consisting of veterans, experienced professionals, to the young crops with a diverse technical background including; architects, sustainability engineers from civil, electrical, mechanical domains.

Key Strengths

- Technical know-how – Most of our employees have master's degree in sustainability & related fields. We also possess various coveted "Accredited Professionals" tag from leading bodies including LEED, GRIHA, IGBC, EDGE & WELL
- Ethics & professionalism – Our company value-system and experience in scaling numerous learning curves ensures timely delivery of projects
- Network & Relationship – Our reputation amongst the certification bodies and our contacts with vendors, manufacturers of green products & services

Services

- Green Building Certification – LEED, GRIHA, IGBC, WELL, EDGE etc. across all types of buildings ranging from commercial, residential, factories, metro stations, IT data-centres etc.
- Simulation services: Energy modelling, Daylight analysis, CFD analysis etc.
- Energy audits, HVAC commissioning, TAB, ECBC compliance
- Impact assessment, sustainability reports, feasibility studies, capacity-building and training

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Foreword

A nation's growth starts from its educational institutions, where the ecology is thought as a prime factor of development associated with environment. A clean and healthy environment aids effective learning and provides a conducive learning environment. Present day educational institutions are becoming more sensitive to environmental factors and more concepts, measures and technology are being introduced to make them sustainable.

To preserve the ecology inside the campus, various viewpoints are applied by the several educational institutes to solve their environmental problems such as promotion of the energy savings, recycle of waste, water reduction, water harvesting etc. As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more prevalent.

Green audit is defined as an official examination of the effects a university has on the environment. As a part of such practice, internal environmental audit (Green Audit) is conducted to evaluate the actual scenario at the campus. Green audit can be a useful tool for a university to determine how and where they are using the most energy or water or resources; the university can then consider how to implement changes and make savings. It can also be used to determine the type and volume of waste, which can be used for a recycling project or to improve waste minimization plan. Green auditing and the implementation of mitigation measures is a win-win situation for all the university, the learners and the planet.

It provides staff and students better understanding of green impact on campus. Green auditing promotes financial savings through reduction of resource use. It gives an opportunity for the development of ownership, personal and social responsibility for the students and teachers.



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Executive Summary

The main findings of the audit show that, in general, all the departments and students at CFAI Foundation for Higher Education¹ are aware about the need for environmental protection at a general level. It was also observed that a number of best practices such as central rainwater harvesting pond, roof top solar system etc. are being followed in the campus.

Also, on a detailed review, it was observed that the university is implementing some of the best practices in terms of facility improvements, ease of learning, energy savings measures, and water conservation activities. Many eco-friendly measures followed in the institution and in certain processes, it could benefit from further review in order to improve their efficiency, fairness and consistency.

About IFHE Campus

ICFAI was established in 1984 as a not-for-profit society with the broad objective of empowering citizens through world class quality education. ICFAI launched a high end, innovative professional program in financial analysis in 1985. The Program was first-of-its-kind in India, aimed at equipping students and working professionals with cutting-edge knowledge in contemporary areas of finance.

ICFAI has established 11 Universities across India. The ICFAI Universities are located at Jaipur, Hyderabad [ICFAI Foundation for Higher Education (IFHE), which is a Deemed University], Dehradun, Tripura, Dehradun, Jharkhand, Raipur, Himachal Pradesh (Baddi), Sikkim, Mizoram, Meghalaya and Nagaland.

The ICFAI Foundation for Higher Education is a deemed-to-be-University established under section 3 of UGC Act, 1956. IFHE's comprehensive student-centric learning approach provides relevant knowledge, imparts practical skills and inculcates a positive attitude among the students.

Today, IFHE is one of the largest multi-disciplinary universities in the country. The Faculty of Management, Faculty of Science and Technology and Faculty of Law are the three main building blocks of the university. The University is a member of the Association of Indian Universities (AIU) and Association of Commonwealth Universities (ACU).

The university has been inculcating the most pragmatic and idealistic education to more than 8,000 students in the current year. The courses provide are in the wide spectrum of Science & Technology, Management & Law taught in English medium. The campus is ranked 2nd among private universities in Telangana - Education World - University Rankings, 2019 with 30 programs over 5 disciplines.

Vision & Mission

Vision of The ICFAI Foundation for Higher Education, Hyderabad is to emerge as an Institution of Excellence known for research, teaching, and practice.

The Mission of the University is 'Learning for Leadership'. It aims at developing a cadre of professionals possessing specialized skills having a sense of social and moral responsibility and the ability to address problems from a broader perspective.

¹ Will henceforth be referred to as IFHE Campus in this report

Introduction

The intention of conducting a Green Audit is to upgrade the environment condition in and around the campus. Various audits tasks like waste management, energy, water and others are carried out to bench mark the performance and improve the respective sustainability parameters.

Ela Green Buildings & Infrastructure Consultants have conducted a green audit at IFHE campus in June 2021.

Table 1 Basic Information

Site Name	ICFAI Foundation for Higher Education (IFHE), Hyderabad
Address	IFHE Campus, Donthanapally, Shankarapalli Road, Hyderabad – 501203.
Name & Contact Info	Mr. N V Sarma - General Manager nvsarma@icfaiuniversity.com Mr. Mahendra: University Engineer Email: mahender@ifheindia.org Mr. P Sai Krishna: Maintenance Engineer Email: saikrishna.p@ifheindia.org Mr. Gopichand Y: Junior Engineer Email: gopichand.y@ifheindia.org Mr. Krishna A: Junior Engineer Email: krishna.a@ifheinfia.org
Year Built	Year of establishment: 1995
Population Breakdown	Students: 8,000 per year Faculty: 300 Maintenance Personnel: 100
Hours of operation	Institutional Buildings: 9 AM to 6 PM
Month per year of operation	10 months
Built-up area	18,00,000 sq. ft (approx.) encompassing residential, academic, administrative, dormitory buildings
Site Area	91 acres (approx.)

Scope & Methodology

The specific objectives of the audit were to evaluate the adequacy of the management control framework of Environment Sustainability as well as the degree to which the Departments are in compliance with the applicable regulations, policies and standards.

During the planning of the audit, an analysis was conducted in order to identify, evaluate and prioritize the practices, facility operation; academic best practices that are with compliance. The methodology used included physical inspection of the campus, review of the relevant documentation, and interviews.

Scope of Green Audit in this report involves the following elements:

- Sustainable Sites
- Water Audit

- Waste Disposal & Management Audit

Recommendations were provided to the project team² (listed at the end of each audit section) based on a detailed analysis of conditions, observing and gathering information during the audit.

Run- Time Schedule

Regular functional hours of university are from 9 am to 6 pm, Monday – Saturday in 2 sessions. Morning session starts at 9 am and ends at 1 pm and the afternoon session starts from 1 pm and ends at 6 pm.

Water Audit

Scope & Methodology

Water audit at IFHE Campus was done to identify water usage pattern in the campus for identifying potential water conservation opportunities. These are the key objectives of a water-use efficiency audit:

- Understand the water supply and distribution systems
- Identify water-use patterns
- Identify deficiencies in the water network system, including leaks and wastage
- Identify baseline and benchmark water use
- Identify water conservation opportunities, including water reuse

The audit was done by conducting a walkthrough at site, conducting interview with the operational staff present at the campus. The campus located at the outskirts of the city and hence water supply is through a mixture of Municipal water & Borewells. As with any part in India, the summer months, essentially, are prone to high water stress leading to acute water shortages. **To address this, the team has erected a rain water harvesting pond of 52,590 KL.**

² Project team refers to personnel at IFHE Campus

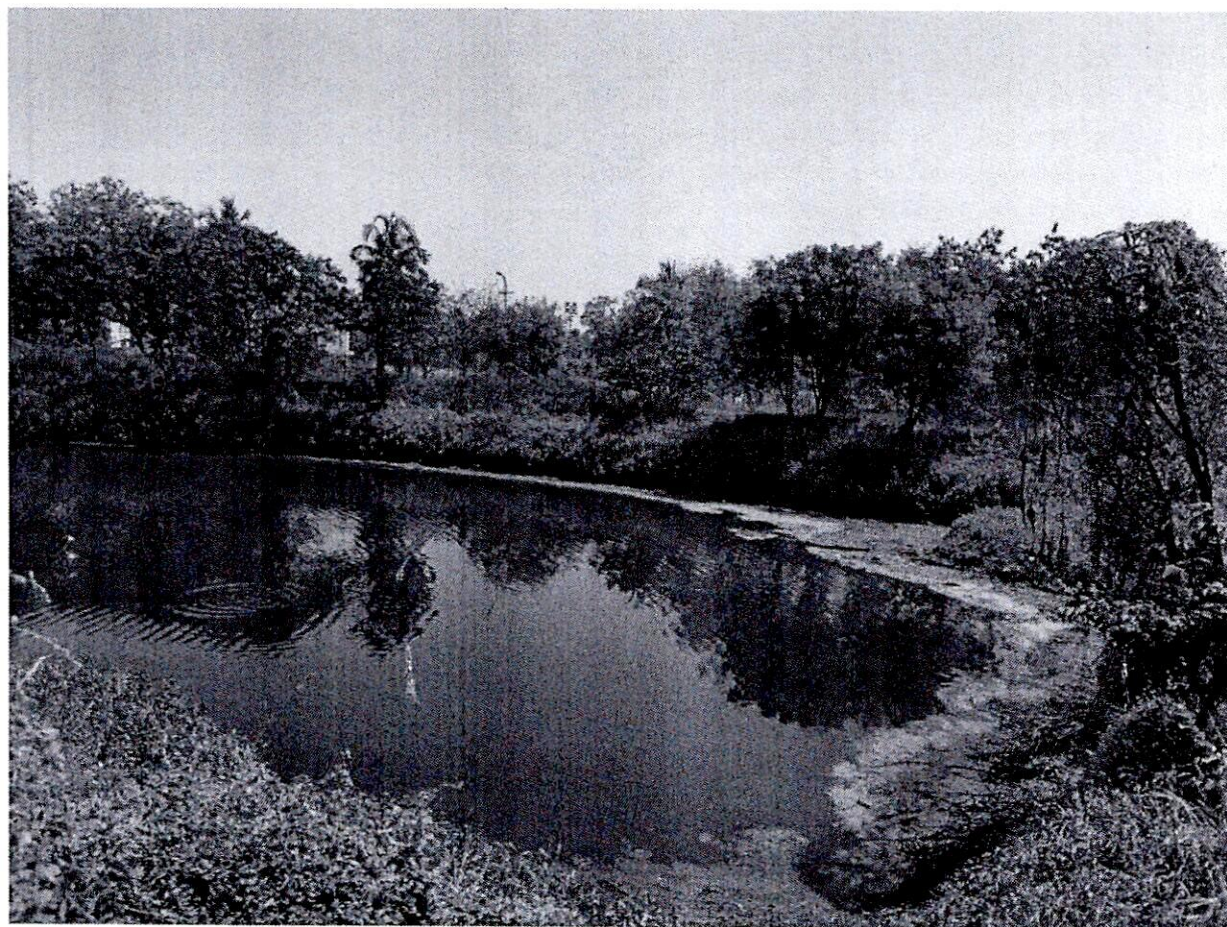


Figure 1 Rainwater Harvesting Pond in the campus

Survey Response pertaining to Water Audit

Table 2 Water Survey Questionnaire

Question	Response
What are the water sources to the facility? How does it cater to the water needs in the campus?	▪ Municipal water & Borewells. Inventory of Borewells can be found in Annexure 1. The water is processed through RO plant and filtered water used for drinking purposes. ▪ The rejected water is used for irrigation and flushing purposes
What are the water conservation techniques used in the campus?	▪ Native species are used in the campus reducing the water needs for landscaping. ▪ Rainwater pits available at site. More pits are planned in future. As of now, excess water is used for irrigation.
What are the irrigation methods used in the campus?	▪ Landscape areas on ground are irrigated manually using hose pipes

What are Maintenance procedures & protocols followed for water fixtures & plumbing system in the campus?	- It is made mandatory to clean and disinfect water holding tanks are disinfected and cleaned at least once monthly or more, if required. - Water filters are replaced periodically to provide the students and staff with pure drinking water
Are there meters/submeters present?	No
Cooling towers installed at site?	Yes
What are the significant water end-uses at site?	Landscaping, Domestic use, cooling tower, Drinking & Flushing
Is there STP at site?	Yes. It also has an artificial pond of 52,590 KL to capture the excess rainwater runoff and recharge the ground water table naturally.
What are the conservation measures employed at site?	Rainwater collections pits and stormwater run-off infrastructure to conserve the rainwater collected at site. Also, STP for reusing grey-water and thus reducing potable water demand.
Inventory of water fixtures	Annexure 2
Is there any evidence of water leaks?	Were observed in the faucets located in dormitories. Regular inspections are recommended to ensure water wastage is minimized

List of Observations, Recommendations & Water Conservation measures

- The indoor fixtures observed lacked any form of flow restrictors such as aerators. Some of the taps observed in hostel and FST block were leaking.
 - Short-term solution recommended is ensuring regular maintenance is done to prevent leaks.
 - Low/No cost solution would be to install aerators which would significantly reduce the water demand.
 - During the next renovation and retrofit cycle, it is recommended that the water fixtures installed are to be installed as per the recommended flow and flush rates to reduce the indoor water usage

Flush WCs	$\leq 2/4 \text{ lpf3}$
Faucets	$\leq 2 \text{ lpm4}$
Urinal	$\leq 1 \text{ lpm}$
Trigger Spray	$\leq 2.5 \text{ lpm}$

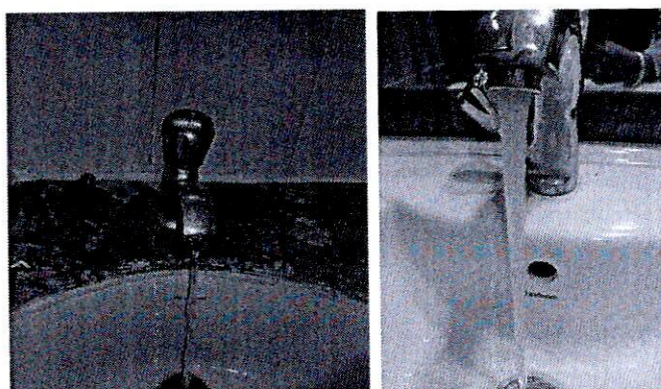


Figure 2 Water Fixtures without aerators on-site

2. 3 STPs of total 900 KLD capacity (2x400 KL, 1x100KL) has been installed to reuse the greywater generated on-site. This is expected to cater to almost 91%³ of the recycling requirement.
 - a. It is advised to increase the capacity to reach 100% which will further reduce potable water usage.
 - b. Alternatively, waterless urinals can save up to 40,000 gallons of water per urinal per year, but special maintenance is required to avoid odour and plumbing issues. It is recommended to replace the urinal fixtures to water less urinals and will lead to lower non-potable water demand.

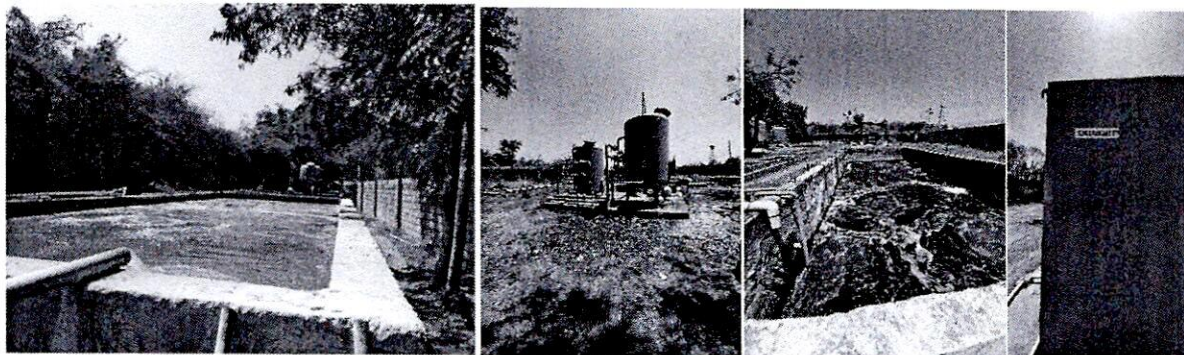


Figure 3 STP on-site

3. Use of native adaptive plants, limited turf area, mulching, efficient irrigation systems and efficient watering can contribute a large extent to outdoor water savings.
4. The sludge from STP can be treated using solar sludge treatment units to produce compost for the garden.
5. Most of the irrigation is water hose based; sprinklers are found in few areas. Irrigation of landscape should be slowly migrated to sprinkler or drip-based irrigation to reduce irrigation water requirement. This would further reduce the need for increasing the STP capacity.
6. Monitoring water use allows us to know where and when water is being used and where the best opportunities for water savings exist. It will aid in accurately tracking the campus water usage. Periodically calibrate the meters for accurate readings. Advantages of water metering include:
 - a. Identify any abnormal increases due to leaks and any error.
 - b. Track water saving and evaluate the efficiency interventions.
7. Provide sub-meters to study the end-use consumption patterns. Sub-meter can be installed for the following end-uses:
 - a. Water supplied to separate buildings
 - b. Food service areas.
 - c. Both the feed and product water from the R.O. system.
 - d. Landscape & roof garden irrigation.
 - e. Process waster such as cooling tower
 - f. Washing machines in dormitories & residential blocks
 - g. Any other intensive water-use systems.

³ Refer Annexure 3 for calculations

Waste Management Audit

Scope & Methodology

A waste audit is an analysis of your facility's waste stream. It can identify what types of recyclable materials and waste your facility generates and how much of each category is recovered for recycling or discarded. Using the data collected, your organization can identify the feasibility of enhancing its recycling efforts and the potential for cost savings. Waste Wise program will help the institution identify waste reduction opportunities.

Waste audit was conducted after gaining a preliminary understanding of the buildings' waste management approach

Waste management practices adopted at IFHE

The waste generated in the campus is segregated in a centralized collection area. The waste is divided in to five categories namely paper, glass, wet and e-waste. The campus has banned the usage of plastic wastes in the campus. It is a plastic free zone. The management has employed a third- party vendors to handle various waste streams.

AMCs are maintained to periodically review the effective functioning of electronic equipment and expert recommendations are followed to dispose the same. The cartridges of printers are refilled outside the university campus. UPS Batteries are recharged and repaired by the suppliers.

It is also ensured that hazardous chemical usage of housekeeping chemicals is minimized. Dry powder, ABC and CO2 type portable fire extinguishers are placed at all the required locations and are HFC free.

Survey Response pertaining to Waste Audit

Table 3 Waste Survey Questionnaire

Question	Response
What is the type of waste generated in the facility?	▪ Dry, Paper, Glass, Wet & E-waste
What are the waste diversion strategies employed to reduce waste sent to landfills?	▪ Third Party vendors for different waste streams ▪ Wet waste such as floral wastage is used for vermicomposting ▪ Food waste is used for bio methanation. The bio-mentation plant on site caters for the cooking energy requirements of the campus.

Waste Management Recommendation

The Management has ensured there are waste diversion & recycling strategies in place to ensure the waste is not directly sent to Landfill. However, there is no robust mechanism in place to ensure the waste streams are properly monitored and audited.

It is recommended to management to keep track of the waste generated, recycling strategy used for each type of waste and the amount waste diverted form landfill. A sample template for keeping track for waste management is provided in Annexure of the report.

Waste Management Practices on-site



Figure 4 HFC-Free Fire Systems

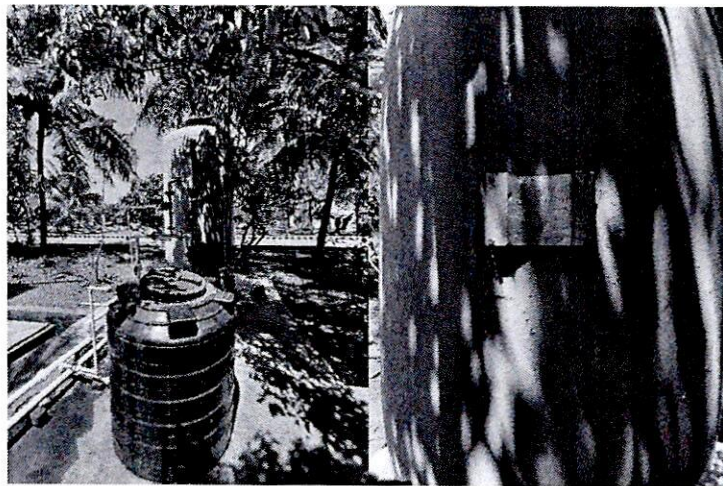


Figure 5 Bio-gas plant at site



Figure 6 Awareness signboards depicting the waste management practices at site

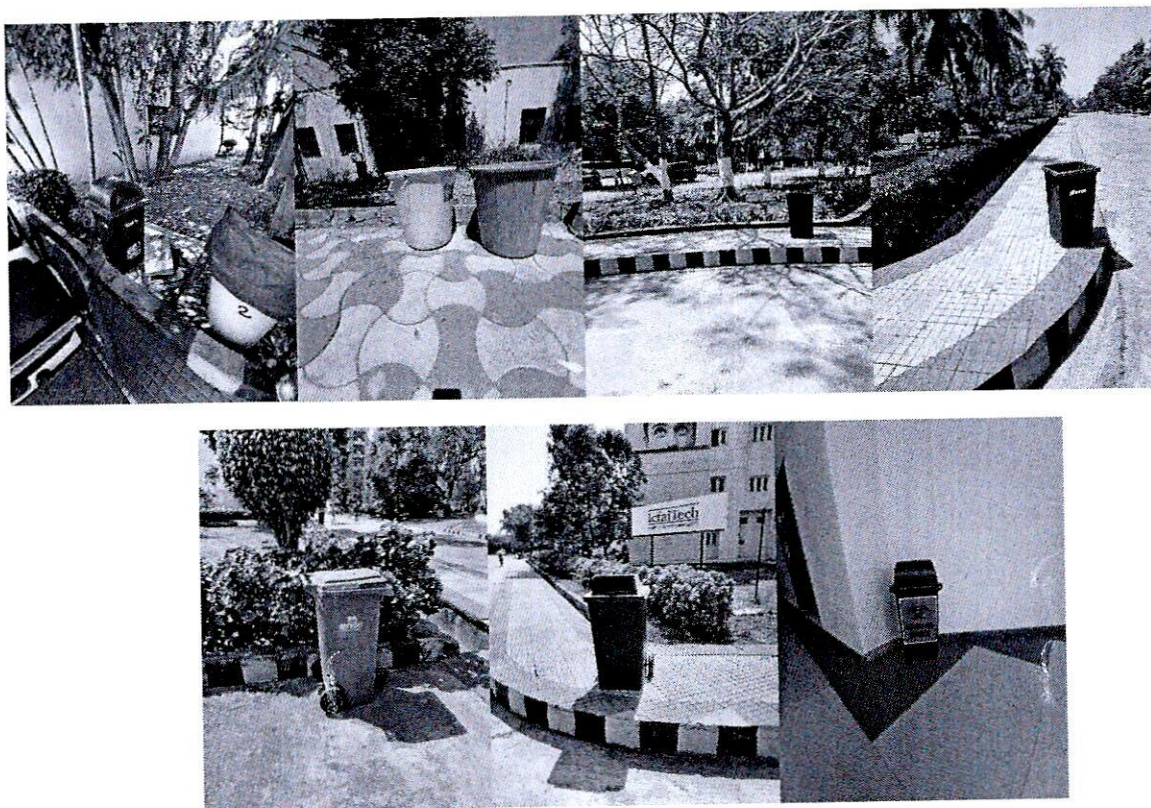


Figure 7 Color-coded bins at site for waste segregation at source

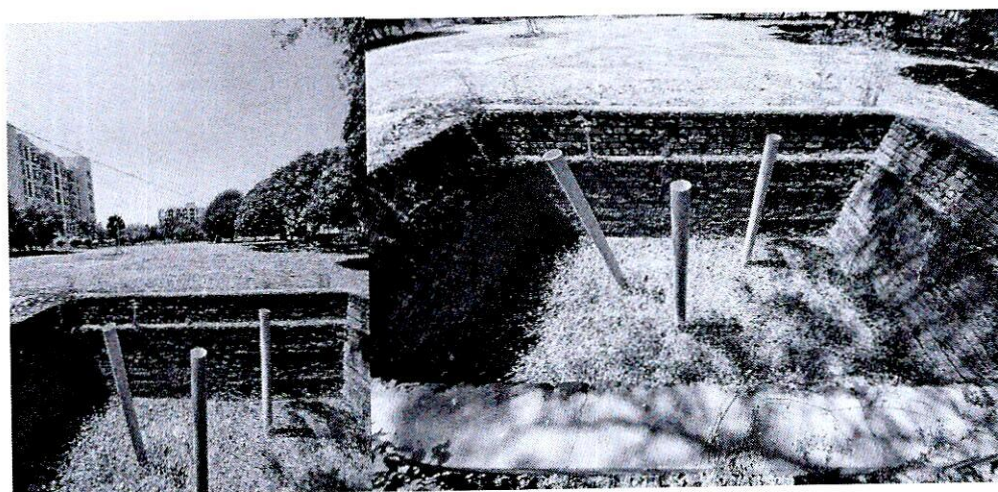


Figure 8 RWH at site

Sustainable Sites

The hardscaped area is nominal and the exposed open area (landscaped or otherwise) is abundantly available. The concrete roads and pavement area are not coated with solar reflective or white paint. Similarly, the rooftops of the buildings are also not coated with any reflective paint. The lighting fixtures are not shielded on the top, thereby emitting light even in the upward direction which results in light pollution. Parking lots were largely unshaded. The flora present in the site largely features indigenous plant variety native to the local climate.

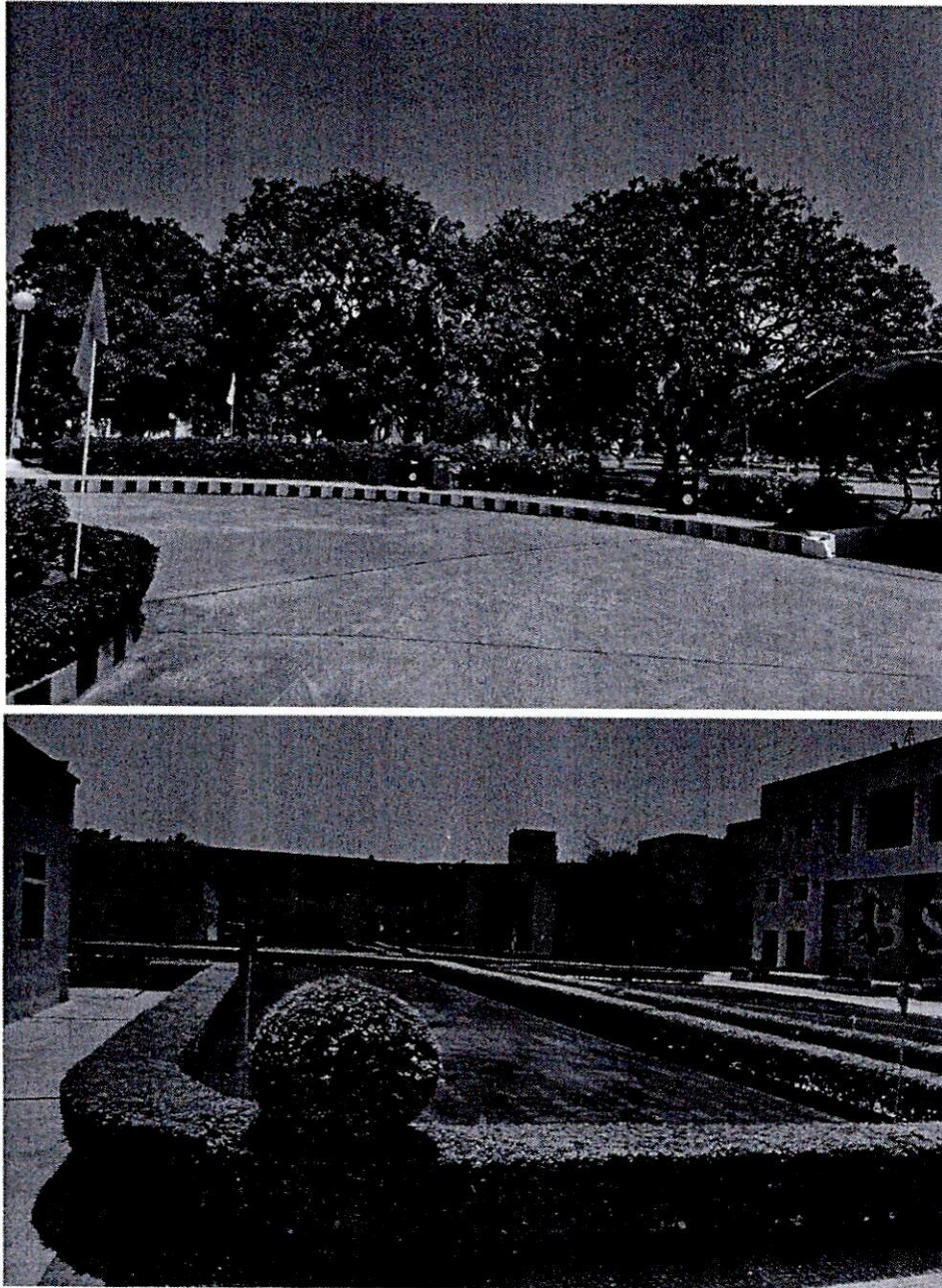


Figure 9 Concrete Roads on-site

List of Recommendations

1. The exposed hardscaped area such as concrete roads and pavements can be painted with simple inexpensive white paint to reflect the heat away
2. The building rooftops can be painted with solar reflective paints to reduce the heat ingress from roof surface into the building
3. The lighting fixtures, if and when replaced, must be shielded on the top to prevent light in the upward direction. Efficient LED fixtures are recommended since most of the exterior lights are either mercury vapor, halogen, or CFL
4. Parking lot can have open grid paver blocks with short trees to provide shade to the car, whilst permitting water to percolate. Alternatively, solar PV mounted shading can also be provided at the car park
5. The turf area can be limited and replaced with native shrubs to balance aesthetics vs. water consumption

Annexure 1 – Borewell Inventory

BORE WELLS CONDITION LIST IN CAMPUS-MARCH-2021

Sl. No.	Location	Owner	HP	Depth (ft)	From (ft)	Pipe	Size	Condition	Remarks
1	COCONUT TREE MAIN GATE	KIRLOSKAR	12.5HP/24	665 ft	FROM 60 ft	G I/600	2"	RUNNING	
2	BUS PARKING IRCL GATE	KIRLOSKAR	5HP/50	900 ft	FROM 80 ft	HDPE/850	40MM	LOW WATER	
3	FROM CAR PARKING 1st one	TEXMO	3HP/35	420 ft	FROM 110 ft	HDPE		COLLAPSE	
4	FROM CAR PARKING 2nd one	TEXMO	3HP/30	370 ft	FROM 80 ft	HDPE		RUNNING	
5	FROM CAR PARKING 3rd one		10HP	450 ft		HDPE		RUNNING	
6	FROM CAR PARKING 4th one		10HP	425 ft		G I		RUNNING	
7	FROM CAR PARKING CORNER	TEXMO	3HP/25	290 ft	FROM 130 ft	HDPE	40MM	RUNNING	
8	FROM CAR PARKING 6th one			360 ft				COLLAPSE	
9	FROM CAR PARKING 7th one	TEXMO	3HP/30	370 ft		HDPE	40MM	RUNNING	
10	FROM CAR PARKING 8th one	KIRLOSKAR	3HP/40	900 ft	FROM 80 ft	HDPE		RUNNING	
11	FROM CAR PARKING 9th one	SILVER	3HP	880 ft	FROM 80 ft	HDPE	40 MM	NO WATER	
12	ACADEMIC BACK BRU COFFEE			1000 ft				COLLAPSE	
13	NEAR A.C PLANT		7.5HP	250 ft	FROM 120 ft	G I/140	2"	RUNNING	
14	ACADEMIC E WING BACKSIDE	KIRLOSKAR	7.5HP/40	995 ft	FROM 90 ft	HDPE/900	40 MM	RUNNING	NEW
15	NEAR A-1 GUEST HOUSE	KIRLOSKAR	10HP/20	450 ft	FROM 150 ft	G I/380	2"	RUNNING	
16	NEAR A-10 GUEST HOUSE		7.5HP/46	600 ft	FROM 100 ft	HDPE/570	40 MM	RUNNING	
17	A-3 GUEST HOUSE BACKSIDE			750 ft				COLLAPSE	
18	BESIDE A-TYPE B GUESTHOUSE	KIRLOSKAR	7.5HP/30	700 ft	FROM 340 ft	HDPE/600	40MM	RUNNING	NEW
19	BACKSIDE OF A7 GUEST HOUSE	KIRLOSKAR	7.5HP/30	640 ft	FROM 420 ft	HDPE/580	40 MM	RUNNING	NEW
20	QRS BACKSIDE	KIRLOSKAR	6 HP	1000 ft	FROM 60 ft	HDPE/950	50 MM	RUNNING	NEW
21	OPP FOL FOOT BALL GROUND			1040 ft				COLLAPSE	
22	OPP NEW FOL MANGO TREE	KIRLOSKAR	7.5HP/40	1000 ft	FROM 60 ft	HDPE/900	40 MM	RUNNING	NEW
23	STP INSIDE COMPOUND	KIRLOSKAR	7.5HP/13	380 ft	FROM 50 ft	G I/260	2"	RUNNING	
24	STP GATE ENTRNCE	KIRLOSKAR	7.5HP/75	1000 ft	FROM 144 ft	HDPE/920	40MM	RUNNING	
25	BASKET BALL GROUND	SUGUNA	7.5HP/15	180 ft	FROM 15 ft	G I/170	2"	RUNNING	
26	CRICKET GROUND	SARITHA	5HP/05	150 ft	FROM 60 ft	G I/140	2"	RUNNING	
27	MESS 2 BACK SIDE	KIRLOSKAR	7.5HP/24	605 ft	FROM 60 ft	G I/540	2"	RUNNING	NEW
28	OLD FOL BACK SIDE	KIRLOSKAR	5HP/50	900 ft	FROM 70 ft	G I/850	40 MM	RUNNING	NEW
29	OPP INDOOR STADIUM CLINIC	KIRLOSKAR	7.5HP/14	300 ft	FROM 100 ft	G I		RUNNING	
30	OPP H BLOCK	KIRLOSKAR	7.5HP/40	965 ft	FROM 350 ft	HDPE/850	40 MM	RUNNING	NEW
31	G & H BLOCK	KIRLOSKAR	7.5HP/24	550 ft	FROM 70 ft	G I/440	2"	RUNNING	NEW

Annexure 2- Fixture Inventory

Description	EWC	Wall mixture	Flush Valves	Wash basin taps
S1 quarters	36	36	36	36
S2 quarters	36	36	36	36
D1 quarters	24	24	24	24
D2 quarters	24	24	24	24
E type quarters	24	24	24	24
C type quarters	32	32	32	32
B1 quarters	36	36	36	36
B2 quarters	36	36	36	36
QRS hostels	121	121	121	121

GH hostel block	355	355	355	355
ABCD hostel block	119	119	119	119
EF hostel blocks	71	71	71	71
IJ hostel block	63	63	63	63
Academic block	121	0	121	121
FST	48	0	48	64
FOL	44	0	44	44

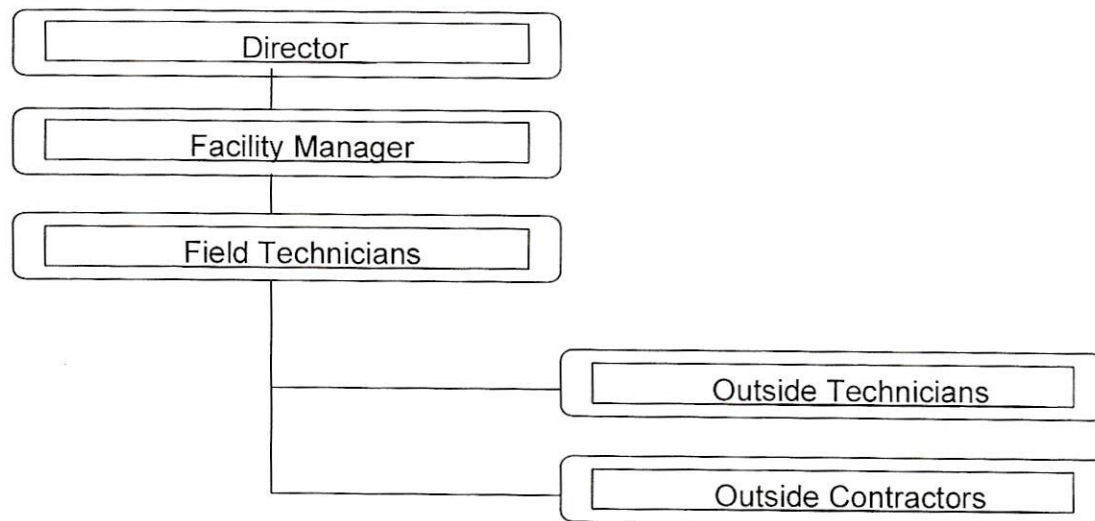
Annexure 3- Indoor Water Use Estimation

Since metering is not available, the water consumption is based on LEED v4 Existing Building guidelines.

FIXTURE TYPE	DURATION	ESTIMATED DAILY USES PER FTE	NO OF OCCUPANTS	BASELINE	
				Flow Rate (LPM/LPF)	Total Daily Water Use (Litres)
Water Closet (High Flush)	1	1	8400	6	50400
Water Closet (Low Flush)	1	4	4200	3	50400
Health Faucets	0.25	1	8400	8	16800
Faucets/ Tap	0.25	8	8400	8	134400
Kitchen Faucet	0.25	6	8400	8	100800
Showerhead/ Handheld Spray	8	1	8000	10	640000
Daily Volume from flush fixtures (Black Water)				100,800	
Daily Volume from flow fixtures (Grey Water)				892,000	

Annexure 4- O+M Plan

Facility maintenance personnel, including the custodians/field technicians, take direction from the Director, per the following organization chart:



Staffing Responsibilities

Director: Based upon the guidance of the Superintendent, the Director is the direct supervisor of the Facility Manager, providing direction on maintenance issues. He/she assists the Facility Manager with needed resources, providing the most appropriate funds for supplies, equipment, and service contracts. He/she also approves the Maintenance Department budget based upon analysis of past expenditures and projected requirements.

Facility Manager: Serves as the direct supervisor of the Outside Technicians, Contractors, and Field Technicians. He/she oversees the scheduling and accomplishment of all maintenance activities, to include the scheduling of work, the assignment of work orders, the provision of needed supplies and equipment, and the approval of contract support. He/she also develops the Maintenance Department budget based upon analysis of past expenditures and projected requirements.

Field Technicians: Works under the facility manager and provides the ground support to the facility manager.

Maintenance Priorities and Procedures

Priorities: IFHE has established the following priorities for Maintenance Department response to requested work:

Emergency: eminent life safety threat or operational disruption that could cause the closure of schools.

Safety/Health/Security/ADA: identified problem that could result in injury if not corrected in a timely manner.

Preventive Maintenance: scheduled inspection or routine maintenance tasks that if not completed, could result in premature failure of a facility system or equipment item.

Unscheduled Repair Actions: action required in repairing a facility system, equipment item, or building component that is not functioning properly, or was damaged.

Support Services: upon request, the maintenance department can assist the facility team with special events and programs. As much advance notice as possible is requested so that this support can be de-conflicted with other work requirements.

Procedures:

IFHE currently processes maintenance work orders manually, with requests from facility and staff called into or personally directed to the Maintenance Department, and, based on priority, the Facility Manager assigns work orders to the appropriate contractor(s). If a contractor identifies a facility problem at the building, they either remedy the problem themselves, or if they need assistance in completing, report the problem to the Facilities Manager.

The Facility Manager also oversees the Operation & Maintenance (OM) program, assigning OM work orders to outside contractors or completes them himself. Completed work is filed, and an analysis of maintenance expenses is completed.

Scheduled Maintenance Tasks and Tracking

The accomplishment of scheduled inspection and Maintenance Tasks, is critical to the successful operation of IFHE. Prescribed inspection and maintenance schedules have been developed and are shown on the following page(s).

IFHE has adopted the Maintenance Tasks as provided in the OESU Preventive Maintenance Program Guidelines. Based upon the equipment at our facility, the tasks are appropriate and will be adhered to in the accomplishment of schedule inspection and maintenance activities. Sample logs are shown in Appendix E.

Established Facility Manager Duties and Responsibilities

DAILY

1. Ensure the sweeping of sidewalks and entryways.
2. Ensure the removal of trash from lawn shrubs, bushes, sidewalks, stairway and parking lots.
3. Review custodial nightly reports and respond appropriately.
4. Review Work Orders.
5. Replace damaged and soiled ceiling tiles.
6. Replace electrical lamps, breakers, fuses and ballasts as needed.
7. Check mechanical & electrical listen for unusual noises; check for excessive heat and equipment vibrations.
8. Ensure doors, windows and roof accesses are secured.

WEEKLY

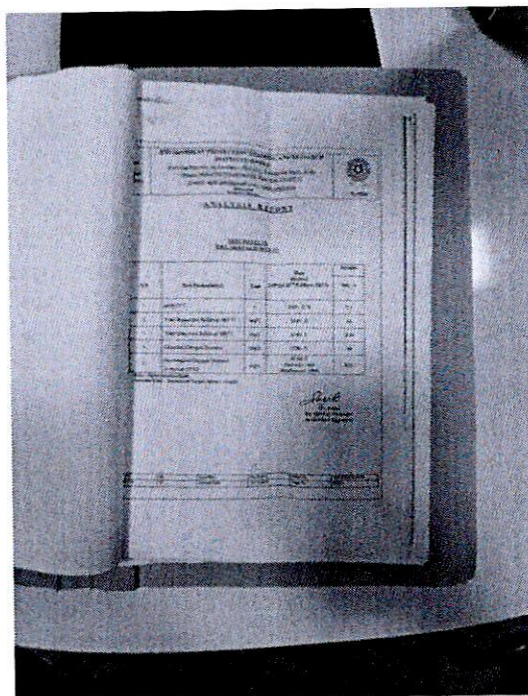
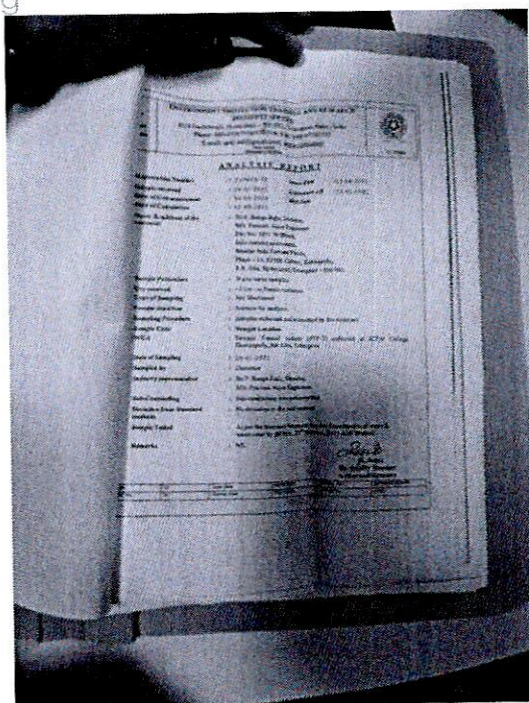
1. Inspect and re-lamp interior/exterior building lighting.
2. Inspect and re-lamp parking lot and site lighting.

PERIODIC

1. Inspect and repair curbs, walks and paving.
2. Inspect and restore signage.
3. Inspect roof conditions; remove debris.
4. Replace batteries.
5. Restore cracks and blemishes on building exterior.

6. Verify that there is adequate supply of filters, lamps, etc.
7. Inspect and restore pavement markings.
8. Inspect all restroom, shower rooms and water closets.
9. Check all door operations and adjust hardware including overhead doors and operators.
10. Inspect and repair all finished surfaces.
11. Replace burned out and flickering lamps (light bulbs).
12. Check for tripped circuit breakers.
13. Inspect and test fire alarm system.
14. Perform monthly fire extinguisher inspect.
15. Supervise annual fire extinguisher testing.
16. Inspect and test smoke detectors.
17. Supervise annual fire protection test.
18. Supervise annual Fire sprinkler system test.
19. Supervise annual backflow protection valve test.
20. Rotate fire line valves off and on.
21. Rotate all plumbing fixture shut off valves.
22. Rotate all water valves serving floor drains.
23. Rotate all bib valves.
24. Supervise air conditioning preventive maintenance service.
25. Inspect, test and service all exit lights.
26. Inspect, test and service all emergency lights.
27. Inspect and test all lighting fixtures.
28. Inspection and maintenance on air conditioning equipment.
29. Inspect Site:
 - a. Fence
 - b. Grounds
 - c. Pavement
 - d. Storm Drainage System
30. Building Exterior
 - a. Entrances
 - b. Landscaping
 - c. Outside Storage Area
 - d. Parking Lot
 - e. Roof
 - f. Sidewalk

Annexure 5- Water Management Practices at Site

3rd Party STP water testing

Annexure 6- Water management Practices at Site

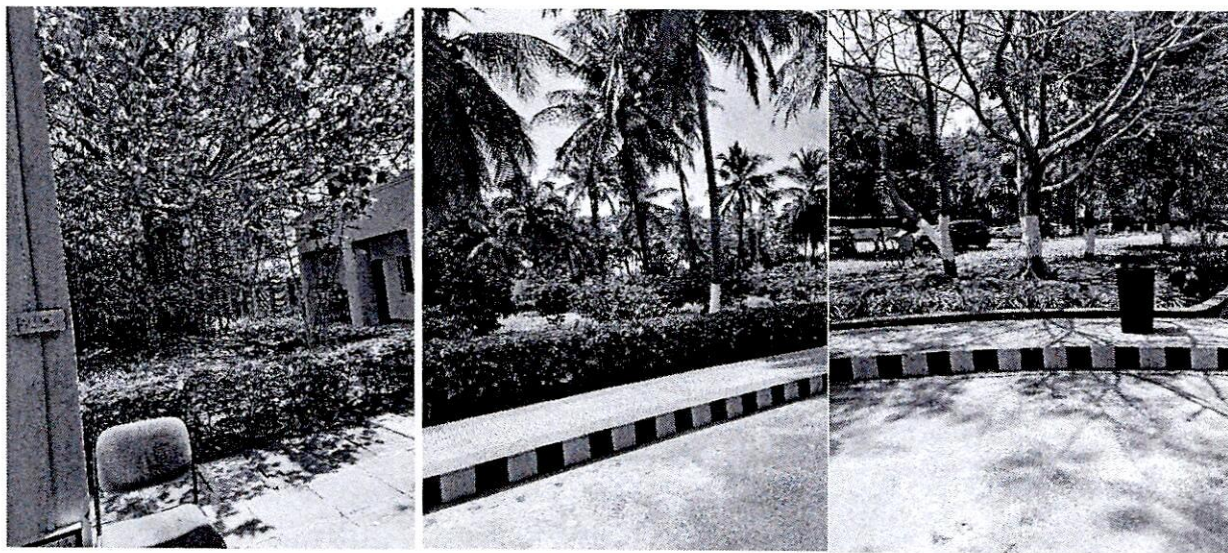
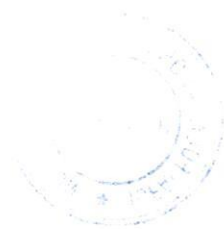


Figure 10 Planting of Native Trees on-site

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HYDARABAD



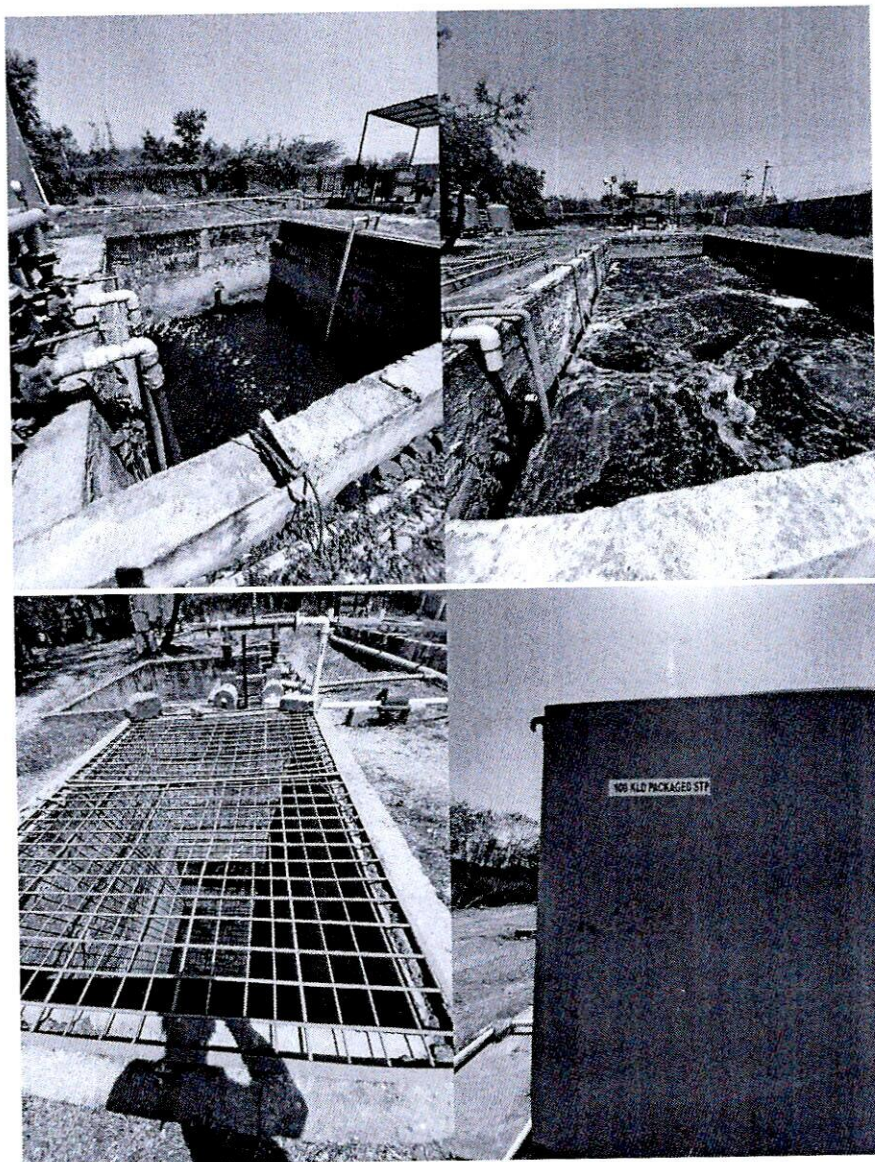


Figure 11 On-site STPs at-site



S. Vijayalakshmi

REGISTRAR

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(Deemed-to-be-University establishes under section 3 of UGC Act 1956.)