

# EXISTING GREEN BUILDING AUDIT REPORT

सह वीर्यम् करवावहे



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## Environmental Audit Conducted and Submitted by

gotmare and associates

Architects, Environmental Architects, Green Building Consultants, Interior Designers, Government Valuers

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## ACKNOWLEDGEMENT

Ar. Manisha Gotmare and their assessment team thanks to the team ideas College, Nagpur for assigning the task of Environmental Audit of the college. We appreciate the cooperation got from all the faculties during the audit. Our special thanks to the Principal Prof. Abhay Purohit for his support and encouragement. We are also thankful to the in-house environmental committee of the college.

Ar. Manisha Gotmare

Environmental Architect

Gotmare And Associates



## ENVIRONMENTAL AUDIT CERTIFICATE

**Project name – ideas-Institute of Design Education & Architecture Studies**

**Location: Nagpur**

This is to certify that Environmental Audit is done for ideas - Institute of Design Education & Architecture Studies, Nagpur and the team ideas has been conducted to assess the institute's environmental policies and objectives, and the effects the institute has on the environment which included waste management, water management, energy management, flora management and fauna as well, and policies and facilities in the institution.

Ar. Manisha Gotmare

Environmental Architect, Green Building consultant, Simulation Expert, IGBC AP, GRIHA EB project in 2019 Auditor

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Phone no. 9822739072

Date – 18-05-2023



## DISCLAIMER

The environmental architect's team has prepared the report of the environmental audit of ideas college, Nagpur, on the primary data collected from the different areas of college. All the reasonable care has been taken in its preparation; the details contained in this report have been compiled in good faith based on the information gathered.

Prepared by

Ar. Manisha Gotmare

Environmental Architect

Gotmare And Associates



## EXECUTIVE SUMMARY

In the current context of rapid changes that are taking place in our country, all activities directed towards advancements are required to be addressed with utmost care. In this effort It is also imperative to prepare architects who can contribute to and manage the needs of society with equanimity of mind and an attitude of social responsibility.

IDEAS is rated amongst the top Architecture colleges in the country. Our students top the RTMNU examinations almost every semester. year after year. The college runs B. Arch. undergraduate and M. Arch. post-graduate programs affiliated to RTMNU and recognized by the Council of Architecture.

At IDEAS all faculty are committed to maintaining an academically rich and professionally competent environment by enhancing the creative attitudes as well as technical skills of students. Our teacher mentors play a vital role in the overall development of our students and the institute with the firm belief that in the current era, creativity and innovation are the basis of sustenance. We keep constantly creating new learning opportunities for our students, which the university curriculum cannot otherwise provide.

In a very short span IDEAS have come a long way and have made their impact felt not only in the city. but also, the country. Our students have outperformed professionally in the local and global scenario and in the universities in India and abroad as they pursue their higher education Today, IDEAS is one of the most sought-after institutes for fresh aspiring architecture students. We are sure that the best in infrastructure, a highly qualified faculty, and our motivated group of students coupled with the vibrant environment will continue to drive the growth of IDEAS as a great institution. We firmly believe that we shall be counted amongst the best at the national level in the years to come.

In all our efforts we seek the path of virtue, courage, and wisdom. May we be the catalyst in all our efforts to make better architects and human beings, who can make a positive impact on our society and help build our nation in these ever-changing and challenging times.

## MISSION

To generate effective synchronization of academicians, professionals, technocrats, and students to achieve “meaningful architecture” for the development of society.

To sensitize and train the students to develop a sense of commitment, professionalism and inculcate aspiration for continuous update of knowledge to serve the local & global community.

## VISION

Establishing a center of excellence in the entire spectrum of Design Education and Application from Product Design to Architecture and from Applied Arts to Fashion Design to serve humanity.

## GOALS

The school aims at establishing an Advanced Center of Learning, turning out creative & technical manpower to play a substantial role in nation-building.

The IDEAS- Institute of Design Education and Architecture Studies shall strive to build its image in a way that it acts as a platform of excellent learning at the national level having expertise to mold the students to cater to the needs of the society in various areas of human habitat, technology, leadership, culture, administration while maintaining ethical, moral and social values.





## Environmental Audit

Environmental audit aims to help protect the environment and minimize the risks of business activities to the environment and human safety and health. Areas examined may include environmental policies and procedures. Then, the audit team can use the results to determine what changes need to be made for compliance.

Ar. Manisha Gotmare

Environmental Architects, Green Building Consultants, Nagpur

## OBJECTIVES OF ENVIRONMENTAL AUDIT

- The objective of this environmental audit is to assess the environmental quality and the management strategies being implemented at IDEAS college, Nagpur.
- To assess the quality of the water and its management in college campus
- To monitor the energy consumption pattern of the college
- To quantify the liquid and solid waste generation and management plans in the campus.
- To assess whether the measures implemented by ideas College have helped to reduce the Carbon Footprint.
- To impart environment management plans to the college
- To assess whether extracurricular activities of the Institution support the collection, recovery, reuse, and recycling of solid wastes.
- To identify the gap areas and suggest recommendations to improve the Green Campus status of the ideas College.

## TARGET AREAS OF ENVIRONMENTAL AUDITING

Environmental audit forms part of a resource management process. Although they are individual events, the real value of green audit is the fact that they are carried out, at defined intervals, and their results can illustrate improvement or change over time. Eco-campus concept mainly focuses on the efficient use of energy and water; minimize waste generation or pollution and economic efficiency.



## METHODOLOGY ADOPTED

The methodology adopted to conduct the Environmental Audit of the Institution had the following components.

**Onsite Visit :** Four day field visit was conducted by the Environmental Audit Team . The key focus of the visit was on assessing the status of the green cover of the Institution, their waste management practices and energy conservation strategies etc. The sample collection of water was carried out during the visits.

**Focus Group Discussion:** The Focus Group discussions were held with the environmental committee members. The discussion was focused on identifying the attitudes and awareness towards environmental issues at the institutional and local level.

**Energy, waste management and water management analysis survey** with the help of the environmental committee members and audit team has assessed the energy consumption pattern and waste generation, disposal, and treatment facilities of the college.

## CAMPUS AREA & COLLEGE BUILDING AREA

	CATEGORIES OF LAND USE	AREA (M <sup>2</sup> )
1.	<b>Landscaped /Plantation Area</b>	<b>3998.24 M<sup>2</sup></b>
2.	<b>Built Up Area (Include roads)</b>	<b>Ground floor built up = 2545.55 sqm. First floor built up = 2449.82 sqm.</b>
3.	<b>Total Area</b>	<b>8164.76 M<sup>2</sup></b>



Google image of ideas college campus

## NAAC GRADING IN ASSESSMENTS



## ENVIRONMENTAL POLICY OF IDEAS COLLEGE

The Institute of Design Education and Architectural Studies. Nagpur {IDEAS} understands its responsibility to protect the environment from the impact of its operations and activities. It endeavors to influence its members and the wider community to minimize their impact through its actions. teaching and research. The Institute is committed to meeting the requirements of all relevant environmental guidance and to continually improving its environmental performance.

Sr. No.	Category	Designation	Name
1	Presiding Officer	Chairperson	Prof. Ajay Thomare, Programme Coordinator (Environmental Architecture)
2	Faculty Members	Member Secretary Member	Prof. Rukhsana Badar (Associate Professor) Prof. Ankita Giripunje (Assistant Professor)
3	Students Nominees	Member	1. Mr. Subhodh Awari 2. Ms. Divyashree Jain 3. Ms. Tanvi Koche 4. Mr. Siddharth Deshbharatar

## GREEN INITIATIVES ON THE CAMPUS

Since its inception IDEAS has been conscious about respecting the environment and conserving natural resources. The campus has been designed with a series of courtyards to provide enough light and ventilation to all spaces and the construction uses appropriate materials where possible to minimize the carbon footprint. The courtyards and surrounding areas are landscaped with preference of indigenous plants.



When it comes to water and waste management the institute believes in reducing use and recycling. A DEWAT system has been constructed on site to handle sewage water from toilets and kitchen. The treated water is reused.

Bio-degradable waste from the canteen and falling leaves are recycled through the process of Composting. Compost thus generated is used in the landscaped areas. A rainwater harvesting system has also been initiated to conserve water for reuse.

The campus is self-reliant when it comes to energy needs, generating surplus Solar Power.

An important part of the green initiatives is about spreading Awareness among all the members of the institute and inculcating good habits when it comes to reducing use and recycling.

A Green Audit had been carried out to determine the strengths and lacunas in achieving a green campus.

The **NADEP method** of organic composting has been initiated on the campus using falling leaves from the landscaped areas. The Nadep method of making miracle compost was first invented by a farmer named N.D. Pandharipande (also popularly known as “Nadepkaka”) living in Maharashtra (India). The process basically involves placing select layers of different types of compostable materials in a simple, mud-sealed structure designed with brick and mud water. It delivers large amounts of compost with minimum human effort. The first batch of compost was extracted and used on the campus.



The team of Architect from Gotmare and Associates are thankful to the in-house team of ideas for cooperation, furnishing required data, and support offered during our visit.



## ENERGY

**Intent:** Building efficiency is key to cutting energy consumption. Improving energy performance in existing buildings

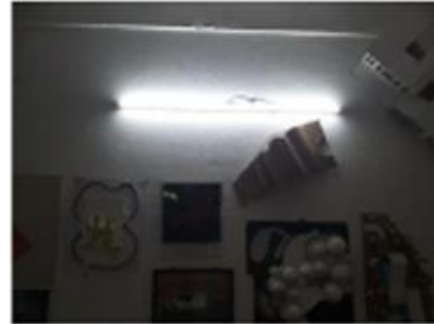
### 1. Energy Efficiency

**Intent:** To enable the project to reduce their energy consumption by adoption of energy efficient strategies.

- a) **Install energy efficient lighting fixtures** – Light-Emitting Diode (LED) tubes and light, 60% of lighting on campus is LED



LED lights in Administration



LED lights in Office



LED lights in staffroom



LED lights in Director's Office



LED lights in Principal's Office



LED lights in Computer room



LED lights in conference room

I.D.E.A.S. ( 2021-22 )  
 Outer Ring Road, Junction Point  
 Hudkeshwar Bujurg,  
 Nagpur.

**Journal Voucher**

No. **515** Dated : 27-Aug-2021

Particulars	Debit	Credit
By: New Ref. NEERAJ LIGHT SHOPPEE	9,402.00 Dr	
To: NEERAJ LIGHT SHOPPEE		9,402.00
New Ref. INV NO-21-221335	9,402.00 Cr	

On Account of :  
 BEING AMOUNT PAYABLE TO NEERAJ LIGHT SHOPPEE TOWARDS SUPPLY OF ELECT MATERIAL (20W BATTEN ORIENT/SSK-SRL 9W-MG/LIGHT 100W/ BATTEN/SSK-RDL ) AS PER INVOICE ATT

₹ 9,402.00 : -    ₹ 9,402.00

Authorised Signatory



LIST OF LIGHTS IN CAMPUS 2022									
ROOMS	Tubelights			LED			CFL		
	NOS.	WATTS		NOS.	WATTS		NOS.	WATTS	
STUDIO 1				20	20	400			0
STUDIO 2				12	20	240			0
STUDIO 3				11	20	220			0
STUDIO 04				13	20	260			0
STUDIO 5				11	20	220			0
STUDIO 6				7	20	140			0
STUDIO 7	12	36	432			0			0
STUDIO 8	24	36	864			0			0
STUDIO 9	13	36	468			0			0
STUDIO 10	15	36	540			0			0
STUDIO 11	12	36	432			0			0
STUDIO 12	13	36	468			0			0
AV ROOM 1	4	36	144	12	9	108			0
AV ROOM 2	4	36	144	4		0			0
AV ROOM 3	2	36	72	2		0			0
AV ROOM 4	4	36	144	2		0			0
AV ROOM 5	7	36	252			0			0
WORKSHOP	6	36	216			0			0
SURVEY LAB			0	36	20	720			0
			0	18	2	36			0
GIRLS COMMON ROOM	4	36	144			0			0
GIRLS WASHROOM	2	36	72			0			0
BOYS WASHROOM	1	36	36			0			0
FACULTY LOUNGE	7	36	252			0			0
MARCH 1	0	36	0	8	12	96			0
MARCH 2	0	36	0	12	12	144			0
MARCH STUDIO	0	36	0			0			0
Ground floor corridor	7	36	252	11	8	88			0
First floor corridor	21	36	756	0		0			0
STAFFROOM 1	0	36	0	10	18	180			0
STAFFROOM 2	10	36	360			0			0
STAFFROOM 3	7	36	252			0			0
STAFFROOM 4	6	36	216			0			0
COMPUTER ROOM	0		0	12	10	120			0
LIBRARY	0	36	0	13	9	117			0
OFFICE	0	36	0	5	20	100	2	9	18
M.K.G.'s CABIN	3	36	108	0		0	2	9	18
A. V. P.'s CABIN	0	36	0	1	20	20	2	36	72
			0	4	7	28			0
U. C.G.'s CABIN	0	36	0	1	20	20	2	36	72
ENTRANCE LOBBY	0	36	0	4	45	180			0
O. A.T.	0	36	0	10	9	90			0
PORCH	4	36	144			0			0
NAAC ROOM			0	12	20	240			0
1ST FLOOR WASHROOM			0	6	12	72			0
	188		2334			3839	25		180

TOTAL LIGHTING POWER REQUIREMENT IN WATTS per HR	6353
TOTAL LIGHTING POWER REQUIREMENT MET THROUGH LED IN WATTS per HR	3839
Percentage of lightening met through LED	60



LED lights in Auditorium

**b) Install energy efficient cooling system and appliances- BEE star rated.**

Sr.no	Location of air conditioners installed	No. of Air conditioners installed
1.	Principal's Cabin	1
2.	Director's Cabin	1
3.	Computer Lab	2
4.	G.F. Staff room	2
5.	Auditorium	3
6.	AV rooms	5
7.	NAAC room	2
8.	1 <sup>st</sup> floor Staff room	2
9.	<b>Total</b>	<b>18</b>

<p>Staff room 1</p>		
<p>Staff room 1</p>		

<p>Lecture Room 2</p>		
<p>Lecture Room 4</p>		
<p>Lecture Room 5</p>		

<p>Lecture Room 5</p>		
<p>Faculty Room 1<sup>st</sup> floor</p>		
<p>Faculty Room 1<sup>st</sup> floor</p>		

## 2. Renewable Energy Utilization

**Intent:** To promote the use of renewable energy technologies and enable energy generation on site.

**The Institute generates and uses 100% renewable energy (solar energy) and sends excess energy to the grid.**



**Important Message**

- Consumers can pay online using Net Banking, Credit/Debit cards at <https://wss.mahadiscom.in/wss/wss> after registration.
- Submit / update your E-mail id and mobile number to Circle office for receiving prompt alerts through SMS.
- Submit / update your PAN and GSTIN to circle office with copies of PAN and GSTIN for verification.
- Special desk is operational for HT Consumers, please contact : htconsumer@mahadiscom.in for any clarification / query or grievance.
- This Electricity Bill should not be use for the address proof and as a proof of property ownership.
- For Any Payment to MSEDCL , ENSURE & INSIST for computerised receipt with unique system generated receipt number. Do not accept handwritten receipts. Pay online to avoid any inconvenience.

CURRENT CONSUMPTION DETAIL						
Reading Date	KWH	KVAH	RKVAH (LAG)	RKVAH (LEAD)	KW (MD)	KVA (MD)
Current 30-06-2021	39545.200	40001.000	2618.000	11380.000	8.900	8.920
Previous 31-05-2021	38894.000	39348.800	2602.600	11276.400		
Difference	651.200	652.200	15.400	103.600		
Multiplying Factor	1.000	1.000	1.000	1.000	1.000	1.000
Consumption	149.000	652.000	15.000	104.000	9.000	9.000
LT Metering	0.000	0.000	0.000	0.000	0.000	0.000
Adjustment	0.000	0.000	0.000	0.000		
Assessed Consump	0.000	0.000	0.000	0.000	0.000	0.000
Total Consumption	149.000	652.000	15.000	104.000	9.000	9.000

CURRENT BILLING DETAIL						
Billed Demand (KVA)	@ Rs.	Charges Rs.	Demand Charges			
12	415	4980.00	Demand Charges			
Assessed P.F.	Avg. P.F.	0.980	Wheeling Charge @ 01.38			
Billed P.F.	L.F.		Energy Charges			
			TOD Tariff EC			
			FAC @ 00.00 Ps/U			
			Electricity Duty ( 00.00 % )			
			other charges			
			Tax on Sale @ 19.04 Ps/U			
			P.F. Penal Charges/P.F. Inc.			
			Charges For Excess Demand			
			Debit Bill Adjustment			
			<b>TOTAL CURRENT BILL</b>			
			Current Interest 07-07-2021			
			Principle Arrears			
			Interest Arrears			
			Total Bill (Rounded) Rs.			
			Delayed Payment Charges Rs.			
			Amount Payable 26-07-2021 After			
			(Amount Rounded to Nearest Rs. (10/-))			
			<b>0.00</b>			





0000 Hrs-0600 Hrs & 2200 Hrs-2400 Hrs	9,766.60	9,447.60	319.00	04.20	04.20	00.00	00.00	00.00	00.00
0600 Hrs-0900 Hrs & 1200 Hrs-1800 Hrs	19,166.40	18,993.20	173.00	44,068.40	42,768.60	1,300.00	1,09,950.00	99,285.00	10,665.00
0900 Hrs - 1200 Hrs	4,967.20	4,959.60	08.00	29,259.20	28,417.60	842.00	00.00	00.00	00.00
1800 Hrs-2200 Hrs	5,645.00	5,493.60	151.00	35.80	33.80	02.00	00.00	00.00	00.00
<b>TOTAL</b>	<b>39,545.20</b>	<b>38,894.00</b>	<b>651.00</b>	<b>73,367.60</b>	<b>71,224.20</b>	<b>2,143.00</b>	<b>1,09,950.00</b>	<b>99,285.00</b>	<b>10,665.00</b>
Offset: 502.00	Previous Banked: 5,216.00			Current Banked: 6,858.00		Billed: 149.00			

**Message:**

Rooftop Solar banking credit was passed in Apr-21/May-21 bill with APPC rate 3.94 / Generic rate 2.90 Rs./Kwh applicable for FY 2021-22 instead of APPC rate 3.85 / Generic rate 2.83 Rs./Kwh applicable for FY 2020-21. Adjustments for rate difference of amount Rs. 2543.22 is passed in this bill.

Your mobile number is 94\*\*\*\*\*21 For updation/registration of mobile number use Mahadiscom website or Mobile App or send sms to 9930399303 as follows MREG 410015268721.

DIGITAL PAYMENT DISCOUNT OF Rs. 0

In case of energy bill paid through NEFT / RTGS, date of amount credited in MSEDCL bank account will be considered as bill payment date.

As per MERC order for Case No 322 of 2019 revised Cheque Bounce charges of Rs. 750 plus GST or Bank charges whichever is higher will be applicable from 01 April 2020.

Message: Rooftop Solar Units:-Export:+00002144,Import:651,Adjusted:+00000502,Bank:+00006858/Prev.Prompt Payment Cr.(Rs.): -68.83/Please refer copy of the bill for details./

As per Income Tax provision vide section 269 ST cash receipt of Rs.2.00 lakhs and above will not be accepted by MSEDCL against any type of Payment.

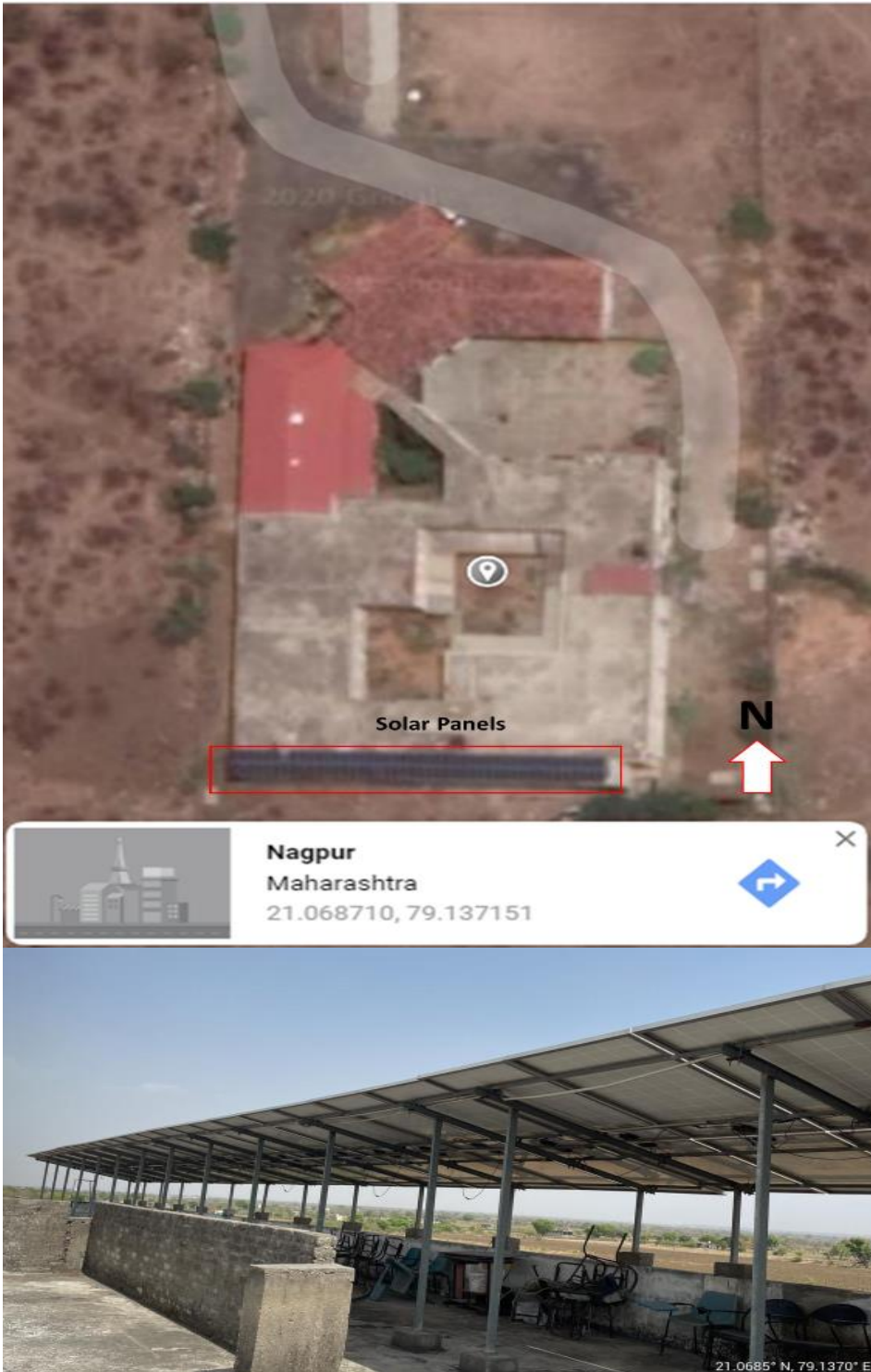
# Prev Prompt Payment Credit:-68.83

# As per MTR order (322/2019) revised tariff for FY 2021-22 is effective from 01.04.2021.

# Prompt Payment Discount: Rs. 0.00 , if bill is paid on or before 20-07-2021 .

**CONDITIONS**

1. The total bill amount of the bill may be remitted by a Crossed Demand Draft/Cheque drawn in favor of 'Maharashtra State Electricity Distribution Co. Ltd.' Whenever Security Deposit is demanded separate Cheque/Bank Draft should be sent.
2. The current bill is payable within fifteen days from the date of issue of the bill. Even if there is any discrepancy in the bill or any other clarification needed, consumers are requested to pay the billed amount in full provisionally or under protest subject to review and subsequent adjustment, so that payment of delayed payment charges is avoided.
3. This bill is issued subject to the provision of the 'Conditions and Miscellaneous charges for supply of Electrical Energy' of the company.
4. Please quote the Consumer Number on the back of the Cheque. The payment of this bill should be made at Company's office only.
5. If the cheque is sent by post, the same should be posted three clear days in advance of the due date.
6. If paid by Cheque/DD/Pay Order, then the Realization date should be considered as payment date.



*Location and photos of solar photovoltaic panels installed on terrace of institute.*

## WATER EFFICIENCY

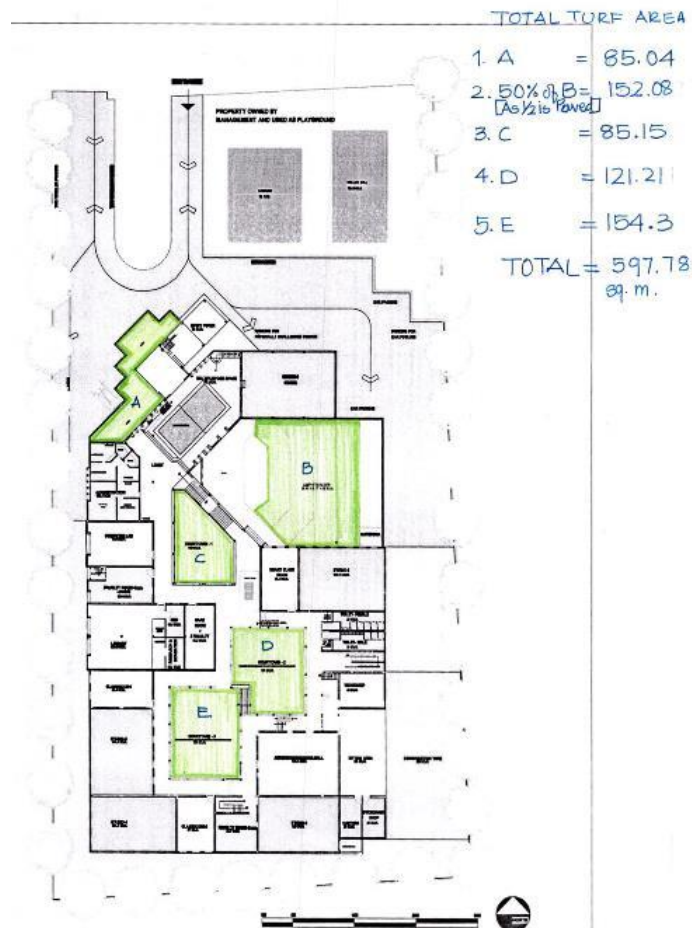
**Intent:** Reduction in the consumption of potable water supplied by municipal local body through improved practices. It further focusses on implementation of no/low-cost water conservation measures and recycling and reuse of water for overall improvement in the water performance.

### 1. WATER FOOTPRINT

**Intent:** To measure water consumption and identify potential areas to optimize water consumption in the project boundary.

**a) Reducing Landscape Water Demand** – Minimizing lawn area and restricting it to 25% of the total landscaped area.

- Total landscape area of the Institute = 4702 sqm
- Total turf area = 597.78 sqm. (13%)





*Lawn area inside the campus*

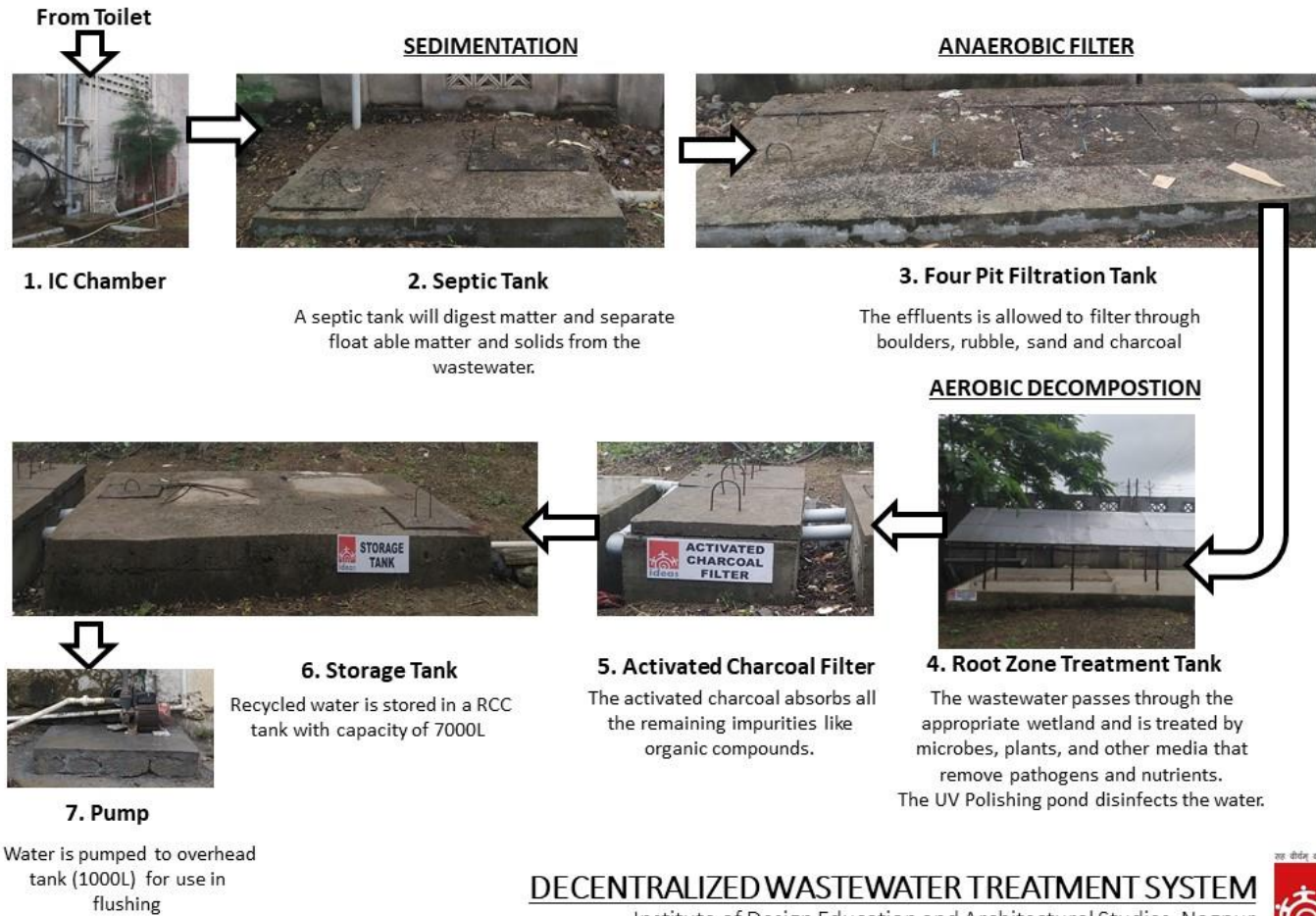
**Use Of Water-Efficient Irrigation Systems to Reduce the Water Requirement.**  
*Sprinklers at lawn area inside the campus*



**b) Reduction In Building Water Consumption By 30% Below the Base Case Through Water Efficient Fixtures.**



**c) Provision Of On-Site Sewage Water Treatment System:** 100 % of grey water treatment on site

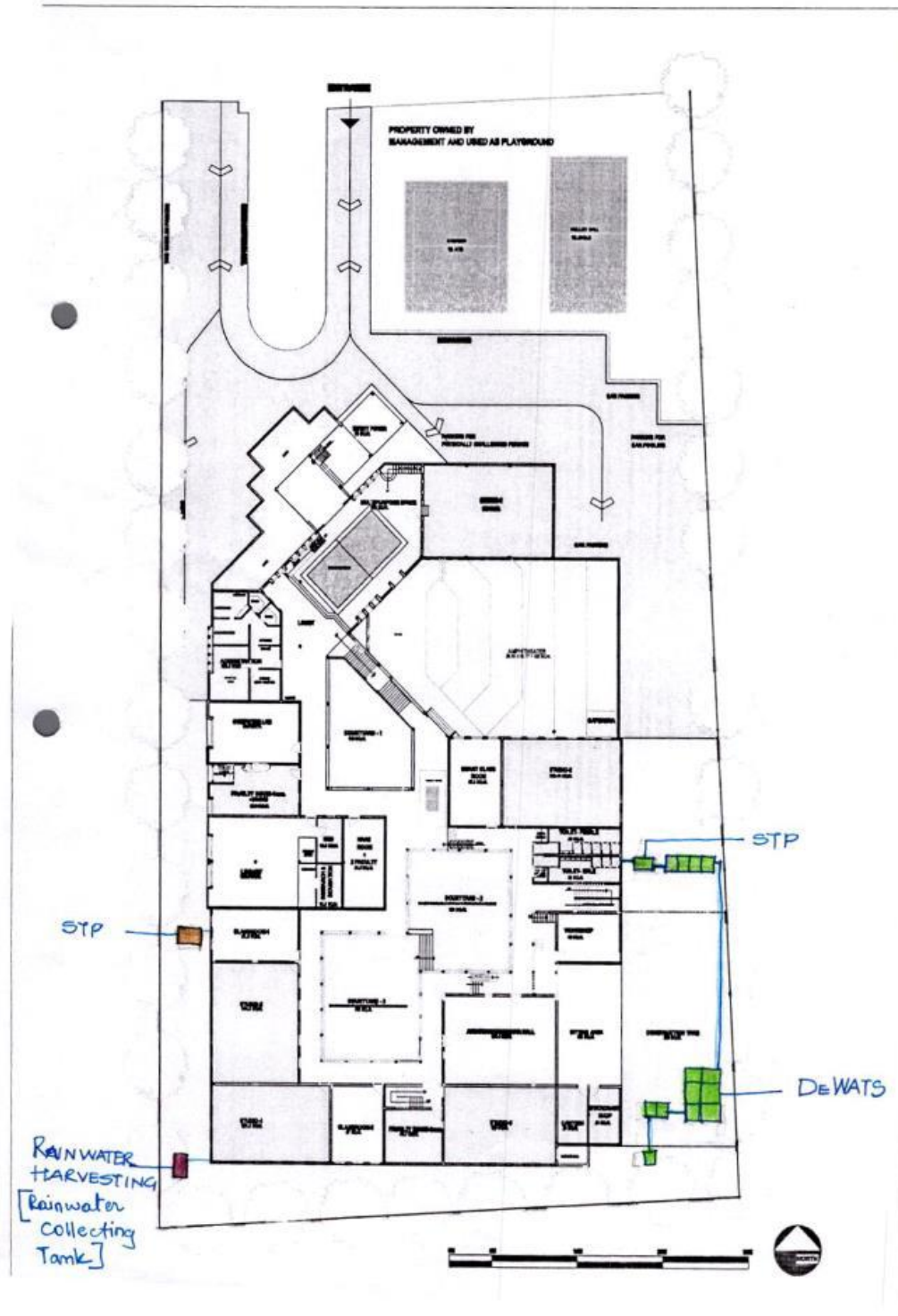


Filter and Storage tank

21.06858° N 79.13744° E



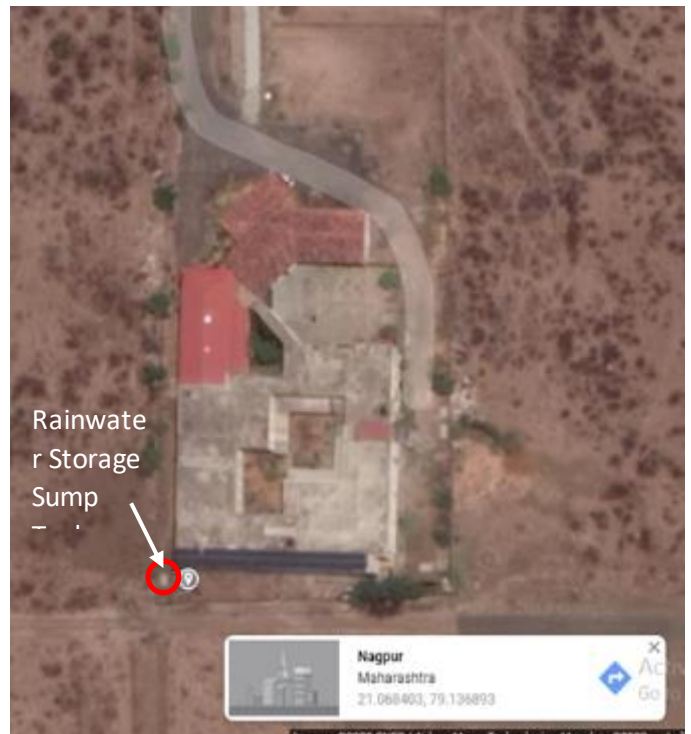
Overhead Storage tank



Plan showing position of STP & different chambers of the DEWAT system

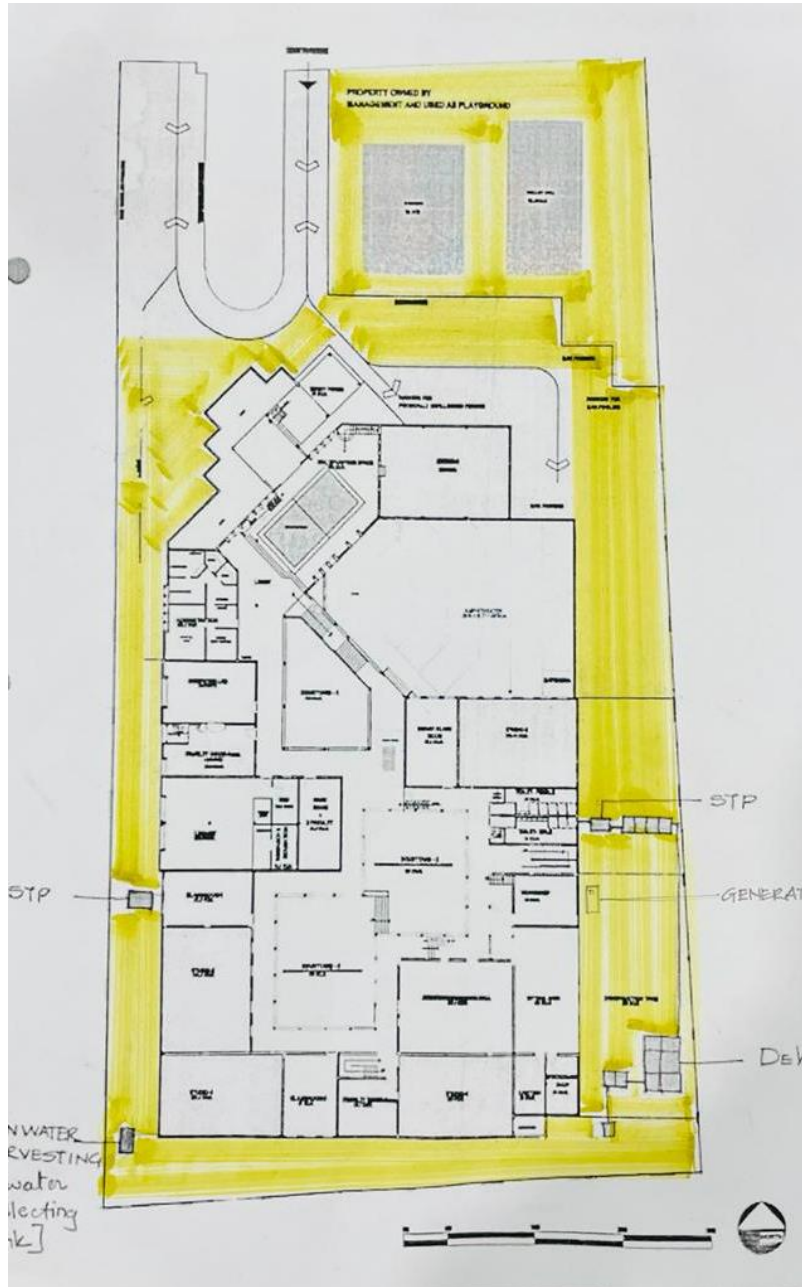
### e) Provision Of Rainwater Harvesting System:

- **Only roof rainwater harvesting.**
- Spouts and rainwater pipes allow the rainwater from the terrace to fall into the courtyard where it is soaked into the ground. Benefits derived through this system are: i) tube well recharging and ii) rise in water table. The institute draws water from the tube well for daily use.
- 
- At present a sump tank of capacity 4100 liters is constructed at south west corner of the campus to store rainwater for reuse in watering plants and cleaning. The institute has planned to increase the system in phases.





- **100% rainwater harvesting of catchment area.**
- The maximum area around the periphery of the building is softscape i.e 92% and the rest 8% is hardscape(roads) which helps in ground infiltration of ground water.



*Plan showing campus softscape in yellow*

## METERING & MONITORING

**Intent :** To promote metering of energy and water consumption of the building to monitor and analyze the performance of the habitat

**a) Installed energy meter at building level to monitor the energy consumption.**



**b) Install water meter at building level to monitor the water**




**consumption.**



**c) Conduct water quality test report as per CPCB /BIS Standards.**

The Water Quality Test was carried out in 2020 and is valid for 3 years



**ANACON LABORATORIES PVT. LTD.**  
 ISO 9001:2015, ISO 14001:2015, OHSAS 18001:2007 Certified Organization  
 Recognized By Ministry of Environment & Forests (MoEF), New Delhi  
 Accredited By Quality Council of India by - NABET

**TEST REPORT**

Test Report No. : AI/PL/1703202002      dated 17.03.2020      Page 3 of 1

<b>Issued To :</b> M/s Institute of Design Education & Architectural Studies Nagpur Hudkeshwar Road, Outer Ring Road, Junction Point, At Post Pipala, Nagpur 440037 Kind Attention : Mr. Ravi Atre Contact No. : 9423678464	<b>Sample Inward No.</b> 2020/W-45/1-1 <b>Inward Date</b> 02.04.2022 <b>Reference</b> Verbal Communication <b>Reference Date</b> 02.04.2022	<b>Analysis Start</b> 02.04.2022 <b>Analysis End</b> 17.04.2022 <b>Sample Category</b> Water
<b>Sample Name</b> Water	<b>Sample Particulars / Details</b> RO Water	<b>Purpose of Analysis</b> Drinking
<b>Sample Collected By</b> M/s Institute Of Design Education & Architectural Studies Nagpur		<b>Quantity Received</b> 1 L
<b>Tests Required :</b> Total coliform, pH, Colour, Odour, Turbidity, Total dissolved solids, Sulphate, Nitrate, Chloride, Calcium, Fluoride, Magnesium, Total hardness, Iron.		

**TEST RESULTS**

S.N.	Test Parameter	Measurement Unit	Test Method	Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 2		Test Result
				Acceptable Limit	Permissible Limit <sup>#</sup>	
<b>I Biological Testing</b>						
<b>1. Water</b>						
1	Total coliform	Per 100 ml	IS 15185 : 2016	Absent	Absent	Absent
<b>II Chemical Testing</b>						
<b>1. Water</b>						
2	pH	-	IS 3025 (Part 11) : 1983	6.5 to 8.5	No relaxation	7.30 at 25°C
3	Colour	Hazen units	IS 3025 (Part 4) : 1983	5	15	BDL (DL - 1)
4	Odour	-	IS 3025 (Part 5) : 2018	Agreeable	Agreeable	Agreeable
5	Turbidity	NTU	IS 3025 (Part 10) : 1984	1	5	BDL (DL-0.1)
6	Total dissolved solids	mg/l	IS 3025 (Part 16) : 1984	500	2000	1250
7	Sulphate (as SO <sub>4</sub> )	mg/l	IS 3025 (Part 24) : 1986	200	400	97.2
8	Nitrate (as NO <sub>3</sub> )	mg/l	APHA Method 23 Edition	45	No relaxation	2.96
9	Chloride (as Cl)	mg/l	IS 3025 (Part 32) : 1988	250	1000	50.02
10	Calcium (as Ca)	mg/l	IS 3025 (Part 40) : 1991	75	200	88.2
11	Fluoride (as F)	mg/l	IS 3025 (Part 60) : 2008	1.0	1.5	1.17
12	Magnesium (as Mg)	mg/l	IS 3025 (Part 46) : 1994	35	100	43.46
13	Total hardness (as CaCO <sub>3</sub> )	mg/l	IS 3025 (Part 21) : 2009	200	600	399
<b>2. Residues in Water</b>						
14	Iron (as Fe)	mg/l	IS 3025 (Part 2) : 2004	1.0	No relaxation	0.27

**NOTES :** # Please see watermark "Original Test Report" to confirm the authenticity of this report. • Results shall be referred to tested sample(s) and applicable to tested parameters only.  
 • This report shall not be reproduced except in full without prior written approval of Anacon Labs. • Liability of Anacon Labs is limited to analytical accuracy only. • Non-particulate and particulate sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. • "mg/l" is equivalent to "ppm".  
 • BDL- Below detection limit • DL- Indicates detection limit of instrument/method and shall be considered as "absent".

**REMARKS :** As suggested by the client, sample was tested for above parameters only. As per IS 10500 : 2012, for test no. 6, 10, 11, 12 & 13 sample exceeds acceptable limit, however, the result is within permissible limit, indicating that with respect to the tested parameter, it can be used for drinking purpose in absence of an alternate source.

**Verified By**

Swati Shrivastava  
Technical Manager

Kavita Sanyalkar  
Technical Manager

Pooja Kulkarni  
Technical Manager

**Authorized Signatory**

Dr. (Mrs.) S.D. Garway  
Director Labs

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 Support Helpline : Technical (9372207175) Email : labreg@anaccon.in, Office (989945450) Email : support@anaccon.in  
 Accounts Division (9090960081, 9372960079) Email : accounts@anaccon.in  
 You may also visit us at www.anacconlaboratories.com  
 Branches : Maharashtra | Chhattisgarh | Madhya Pradesh | Jharkhand | Delhi

## MAINTAINING GOOD IAQ

**Intent:** To ensure good indoor air quality and quantity (IAQ) for all occupants inside the building

- a) **Smoking must be banned/ prohibited within the building premises.**



*No Smoking Sign Located at Entrance.*

**b) Make use of environment-friendly cleaning and for housekeeping materials**

Environmentally friendly products are used for cleaning to avoid toxins that are present in other cleaning products.



c) **Application of Low volatile organic compounds (VOC) paints to maintain good air quality.**

**Birla White WALLCARE**  
 White Cement Based Putty  
 AUTHORISED APPLICATOR

**Pralhad Painting Works**  
 76, New Subhadar Layout, Nagpur-440024.  
 Pralhad Nagarale - 9822506866

Ref.No \_\_\_\_\_ Date 18/5/22  
 \_\_\_\_\_ Idea's college. \_\_\_\_\_

Description	Sq	W.M. Rate	Amount.
one coat White Cement Two coat Exterioe LOW VOC Paint with Brush finish.	5286'	18/-perfit	95148=00
( Ninety Five thousand one hundred forty Eight only )			95148=00

Approved

Pralhad Painting Works

## SOLID WASTE MANAGEMENT

**Intent:** to promote the occupants to manage the solid waste at site level sustainably.

### a) Garbage Segregation, Collection and Disposal

- Wet waste from the kitchen is composted and the manure that it yields is used in landscape areas.
- Dry leaves are composted using Nadep method.
- Dry waste from classrooms, staff rooms and offices are segregated.
- Paper and sheets are sold to identified agencies for recycling.
- Single side paper is used for rough work.
- The rest of dry waste is sent to landfill.
- Sanitary napkins are disposed of in an incinerator.



*Dry leaves are composted using the Nadep method in a two chamber pit*



*Used Paper Sent For Recycling*



*An Incinerator At Girl's Toilet*

**b) Provide (multi-colored dustbins/different garbage chutes) to building occupants to ensure segregation of waste at source**







*Multi-Coloured Bins At Each Floor To Segregate Waste At Site*

**c) Treat organic waste on site**

**Intent:** To promote recycling and reuse of organic waste on site.





*composting pit for organic waste or organic waste composter on site.*

## ENVIRONMENTAL AWARENESS

**Intent:** To increase environmental awareness amongst the building users and visitors.

**a) HVAC and other cooling equipment in the building are CFC-free, with low ozone depleting potential.**

<p>1</p>	<p>Computer Lab</p>	 <p>34CP+6JR, Mumbai - Kolkata Hwy, Nagpur, Maharashtra 441204, India              21°07'N 79°14'E</p>	<p>SPLIT AIR CONDITIONER</p> <table border="1"> <tr> <td>Model</td> <td colspan="2">FLS19A3C</td> </tr> <tr> <td>Refrigerant</td> <td colspan="2">R22/1300g</td> </tr> <tr> <td>Excessive Operating Pressure</td> <td>Discharge</td> <td>2.45MPa</td> </tr> <tr> <td></td> <td>Suction</td> <td>0.7MPa</td> </tr> <tr> <td>Weight (Outdoor)</td> <td colspan="2">38kg</td> </tr> <tr> <td>Power Source</td> <td colspan="2">230V/50Hz</td> </tr> <tr> <td>Rated Current</td> <td colspan="2">13.0A</td> </tr> <tr> <td>Rated Input</td> <td colspan="2">2400W</td> </tr> </table> <p>LLOYD</p>	Model	FLS19A3C		Refrigerant	R22/1300g		Excessive Operating Pressure	Discharge	2.45MPa		Suction	0.7MPa	Weight (Outdoor)	38kg		Power Source	230V/50Hz		Rated Current	13.0A		Rated Input	2400W													
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**b) Plant native trees on site at the proportion of 1 mature tree per 80sqm of the plot area.**

Total area of Institute = 8172 sqm.

No. of trees required @ 1 mature tree per 80sqm = 102 trees

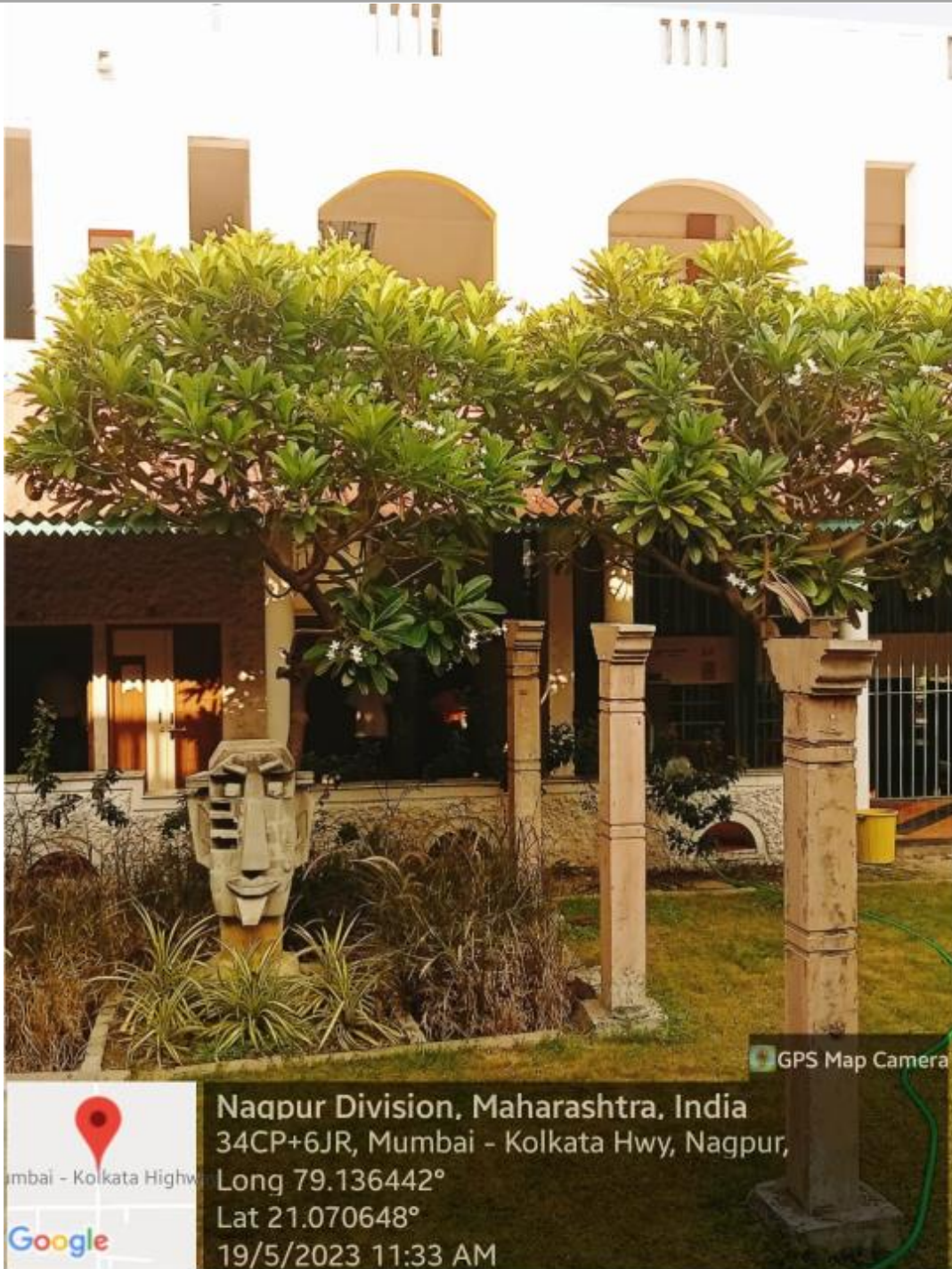
The college has 300 trees.



*Photos showing trees on the campus.*

## FLORA AND FAUNA IN COLLEGE CAMPUS





Common name	Botanical name	No. of trees
Champa	Plumeria alba	18

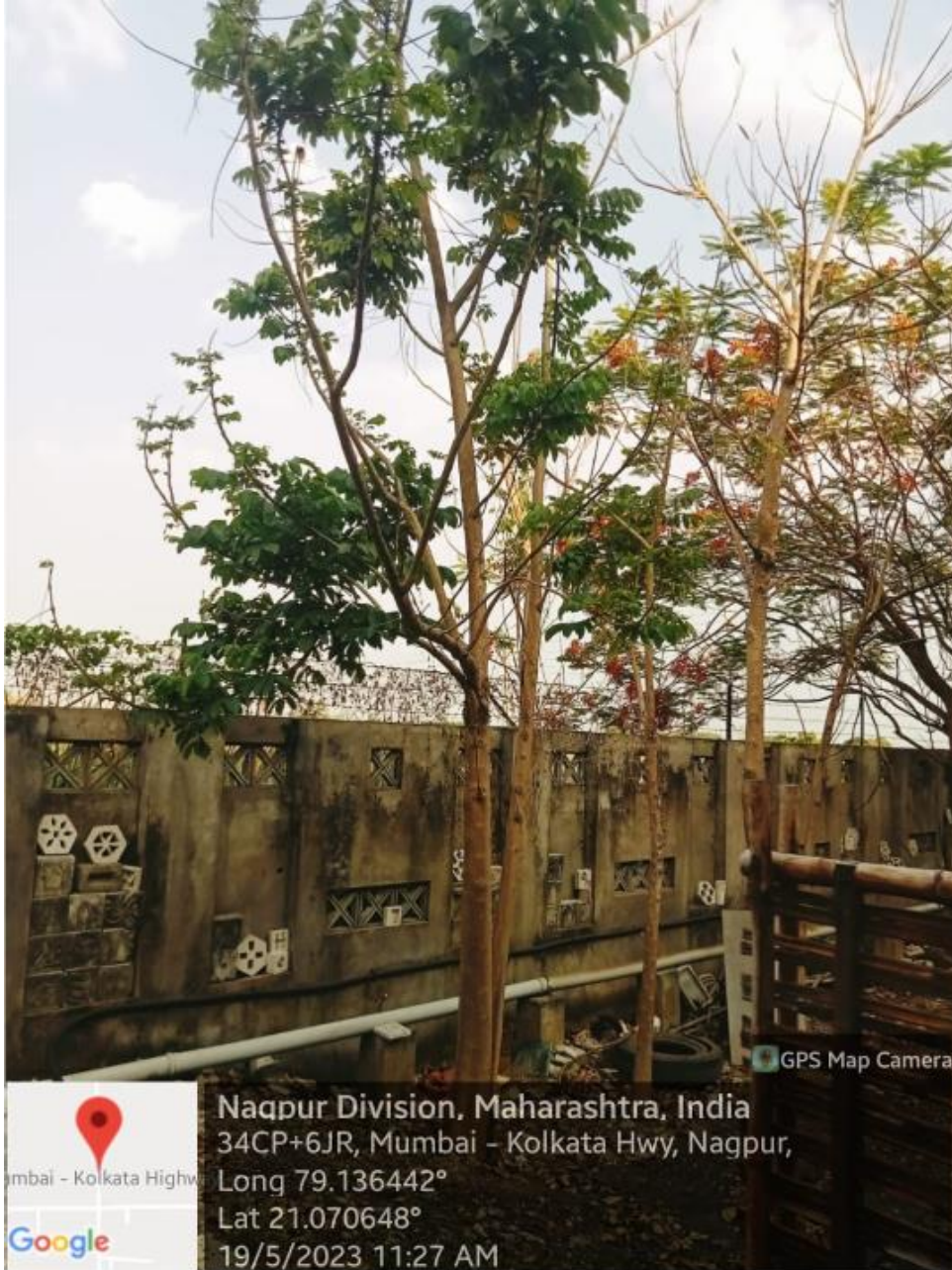


Common name	Botanical name	No. of trees
Kadamb	<i>Anthrocephalus kadamba</i>	3





Common name	Botanical name	No. of trees
Golden Bamboo	Bambusa vulgaris	150



Common name	Botanical name	No. of trees
spathodia	Spathodia campanulata	2



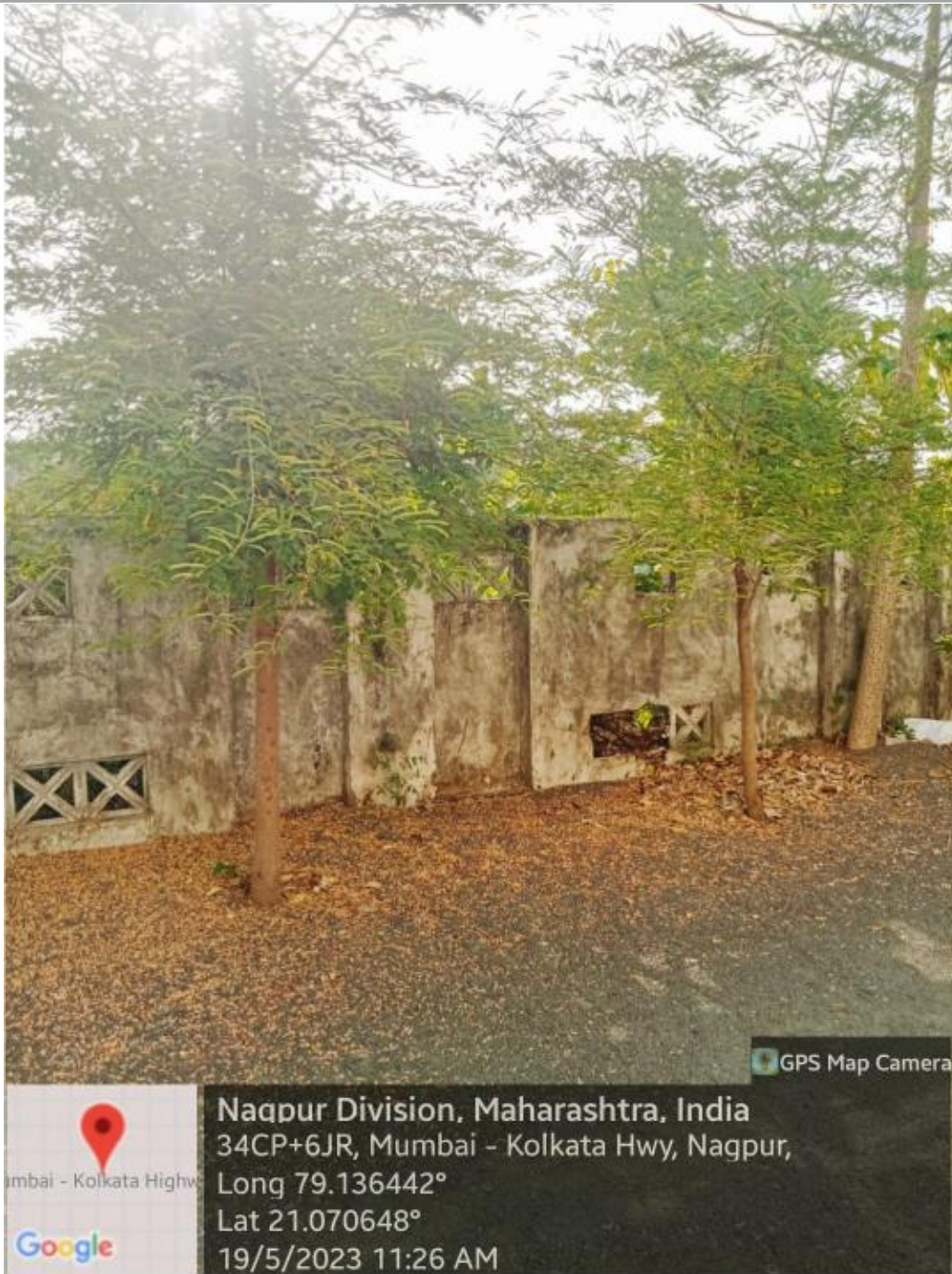
Common name	Botanical name	No. of trees
Gulmohar/ flame tree	Delonix regia	24



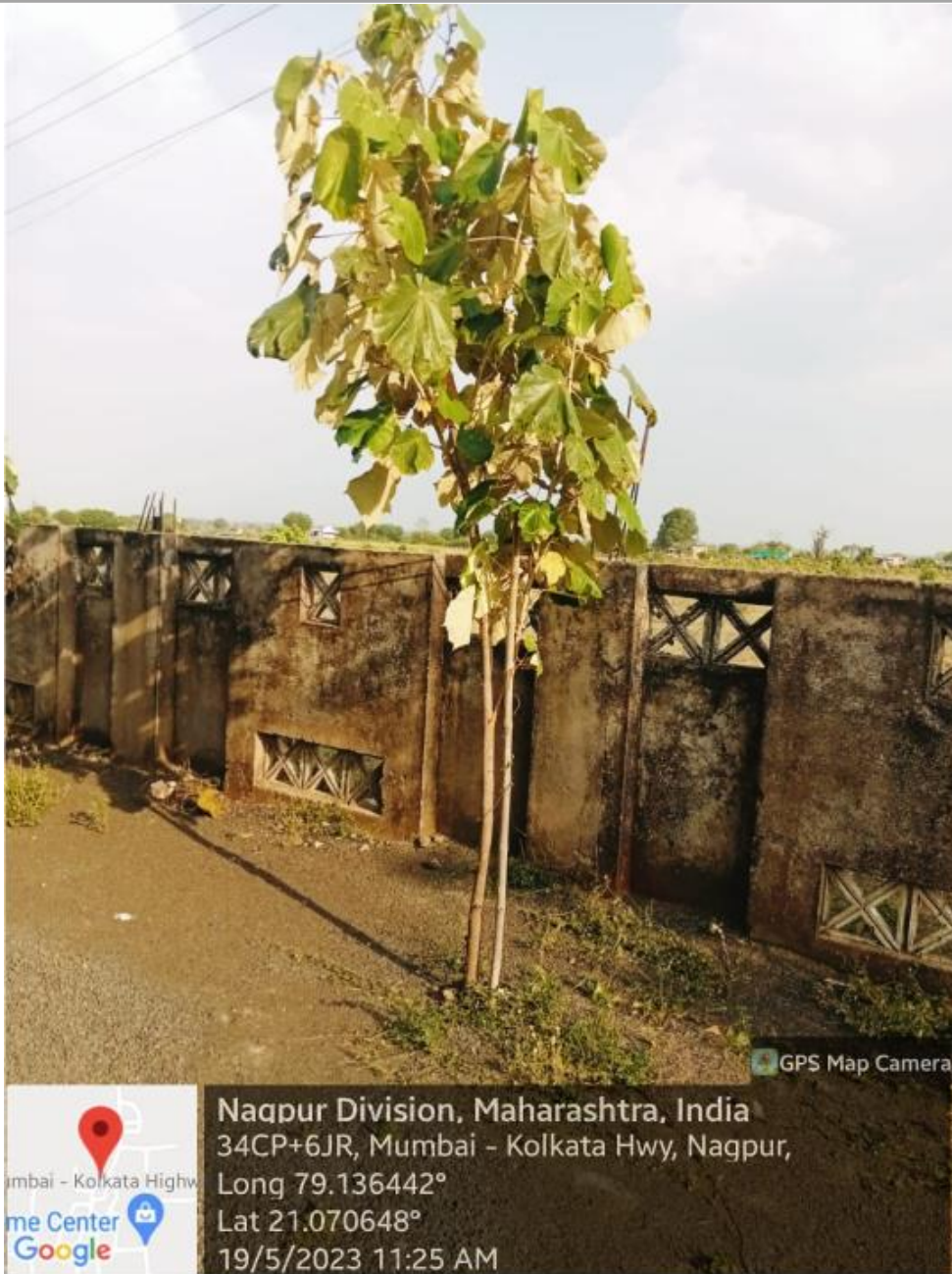
Common name	Botanical name	No. of trees
Mahuaa	Madhuca longifolia	4



Common name	Botanical name	No. of trees
Nimbu	Citrus limon (Nimbuka)	4



Common name	Botanical name	No. of trees
Chinch / Tamarind	Tamarindus indica	4

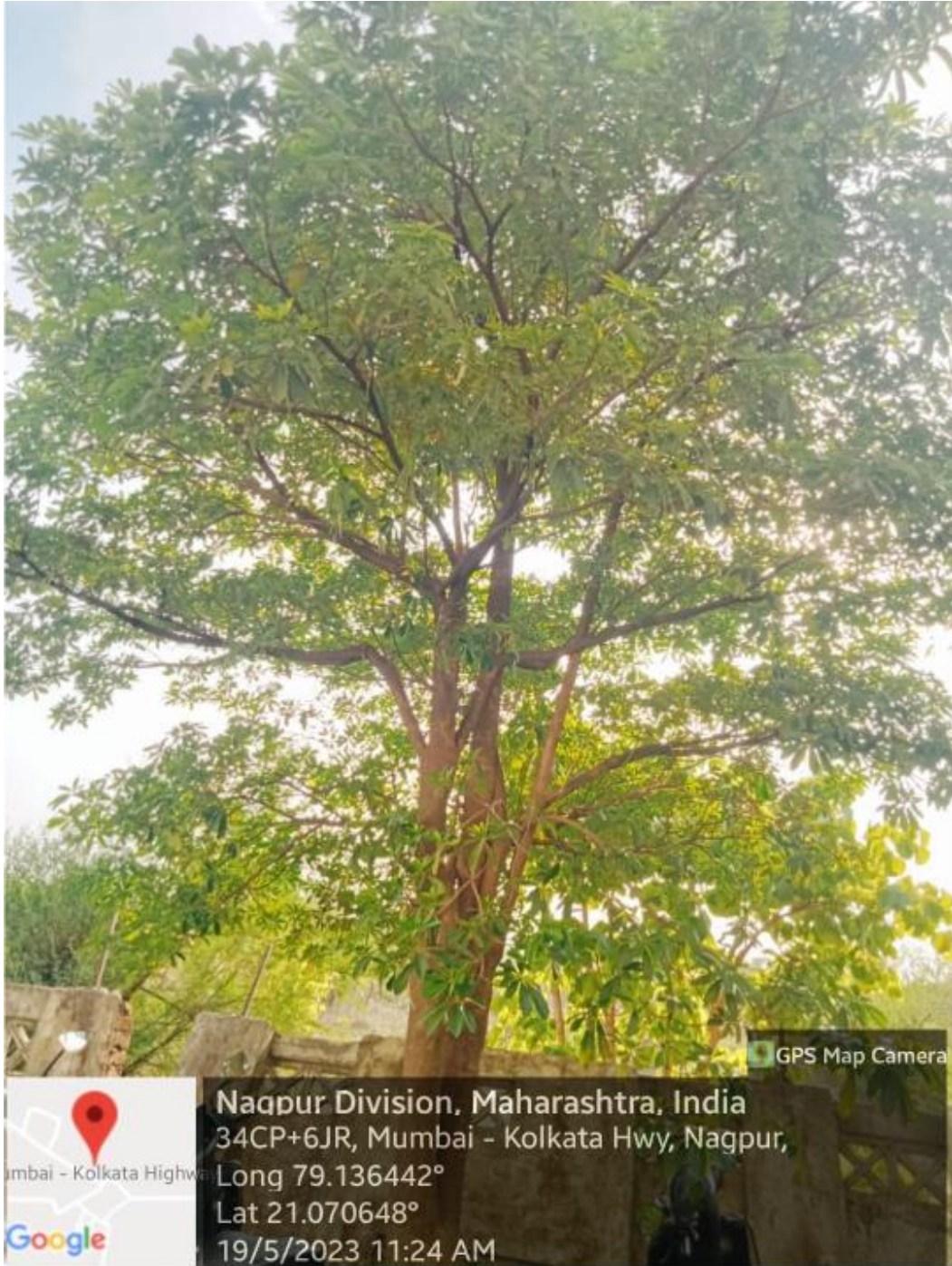


Common name	Botanical name	No. of trees
Kanak Chafa	Pterospermum acerifolium	10



Common name	Botanical name	No. of trees
Karanja	Millettia Pinnata	20





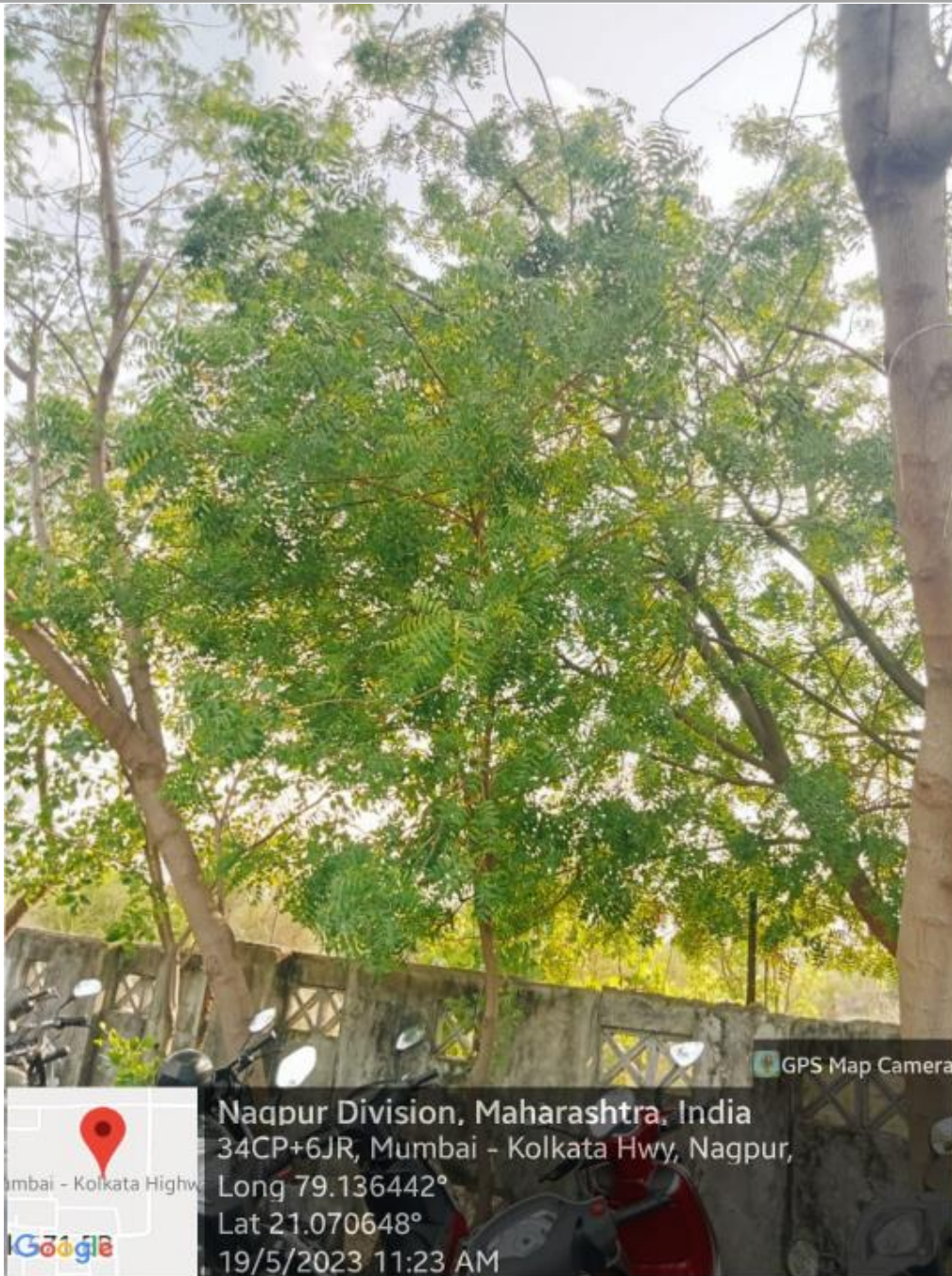
Common name	Botanical name	No. of trees
Saptaparni	Alstonia scholaris	4



Common name	Botanical name	No. of trees
Amaltas	Cassia fistula	20



Common name	Botanical name	No. of trees
Bakul	Mimusops elengi	4



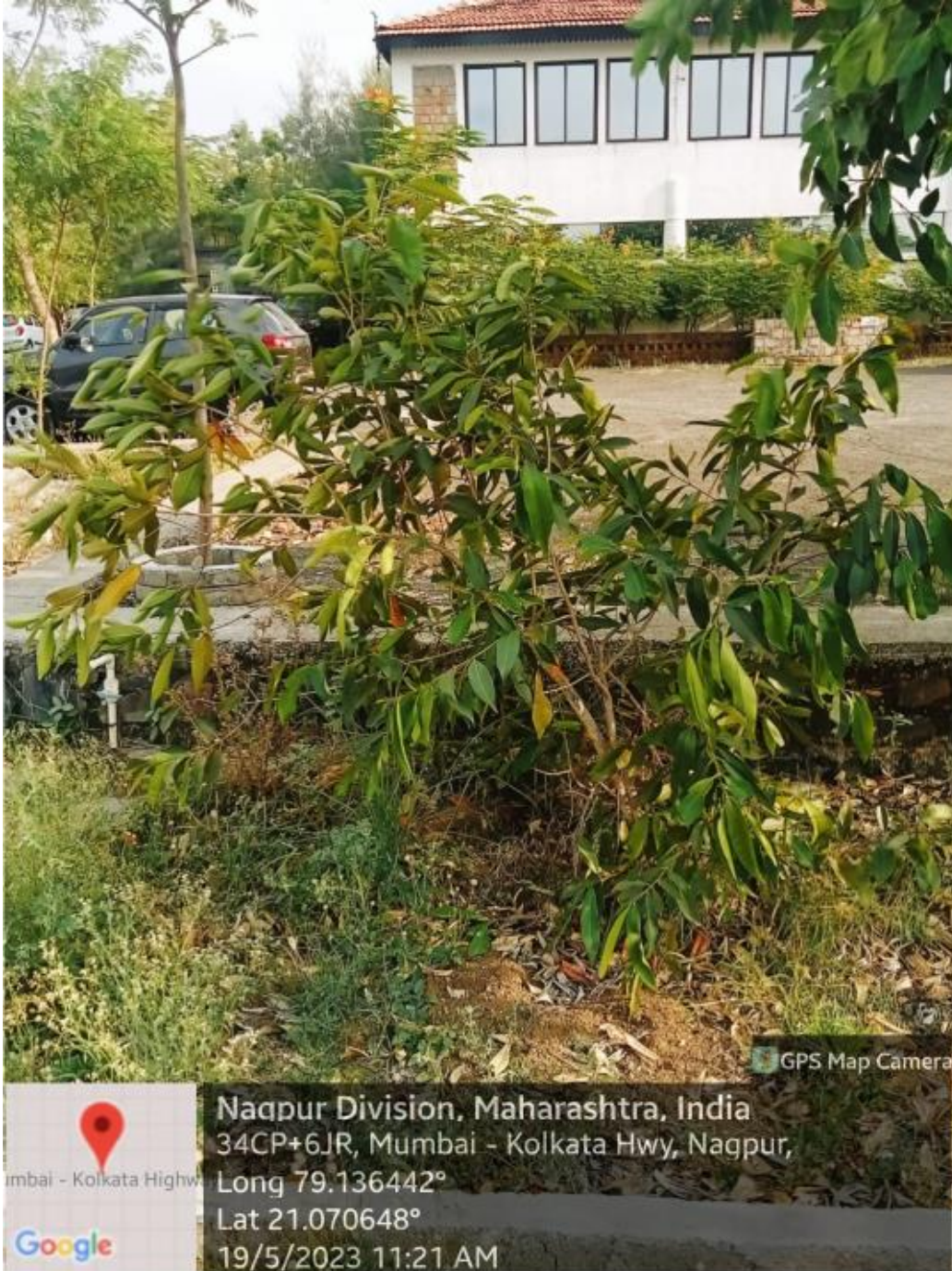
Common name	Botanical name	No. of trees
Neem	Azadirachta indica	10



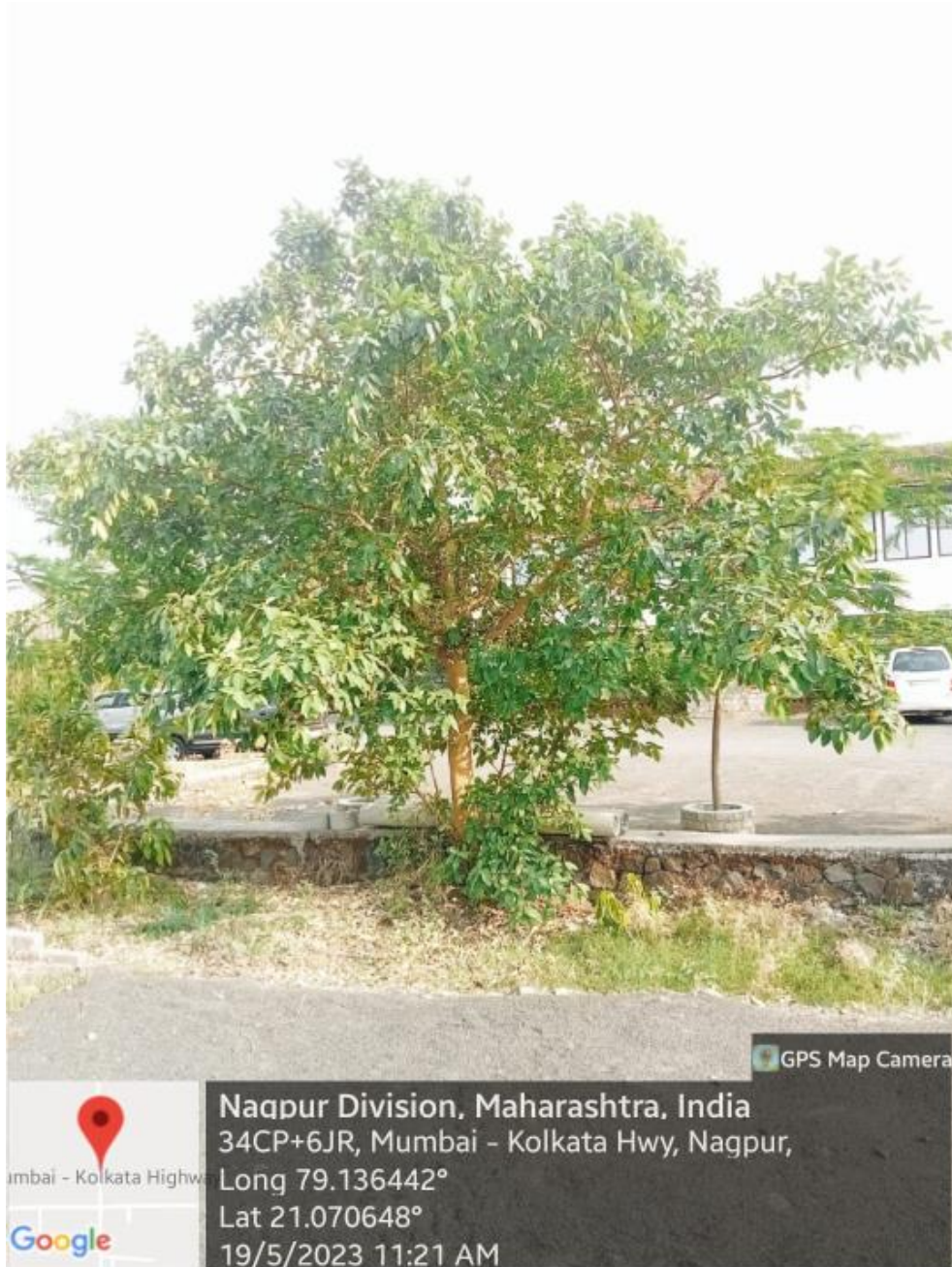
Common name	Botanical name	No. of trees
Saru	Casuarina Equisetifolia	10



Common name	Botanical name	No. of trees
Mango	Mangifera indica	2



Common name	Botanical name	No. of trees
Jamun	Syzygium cumini	2



Common name	Botanical name	No. of trees
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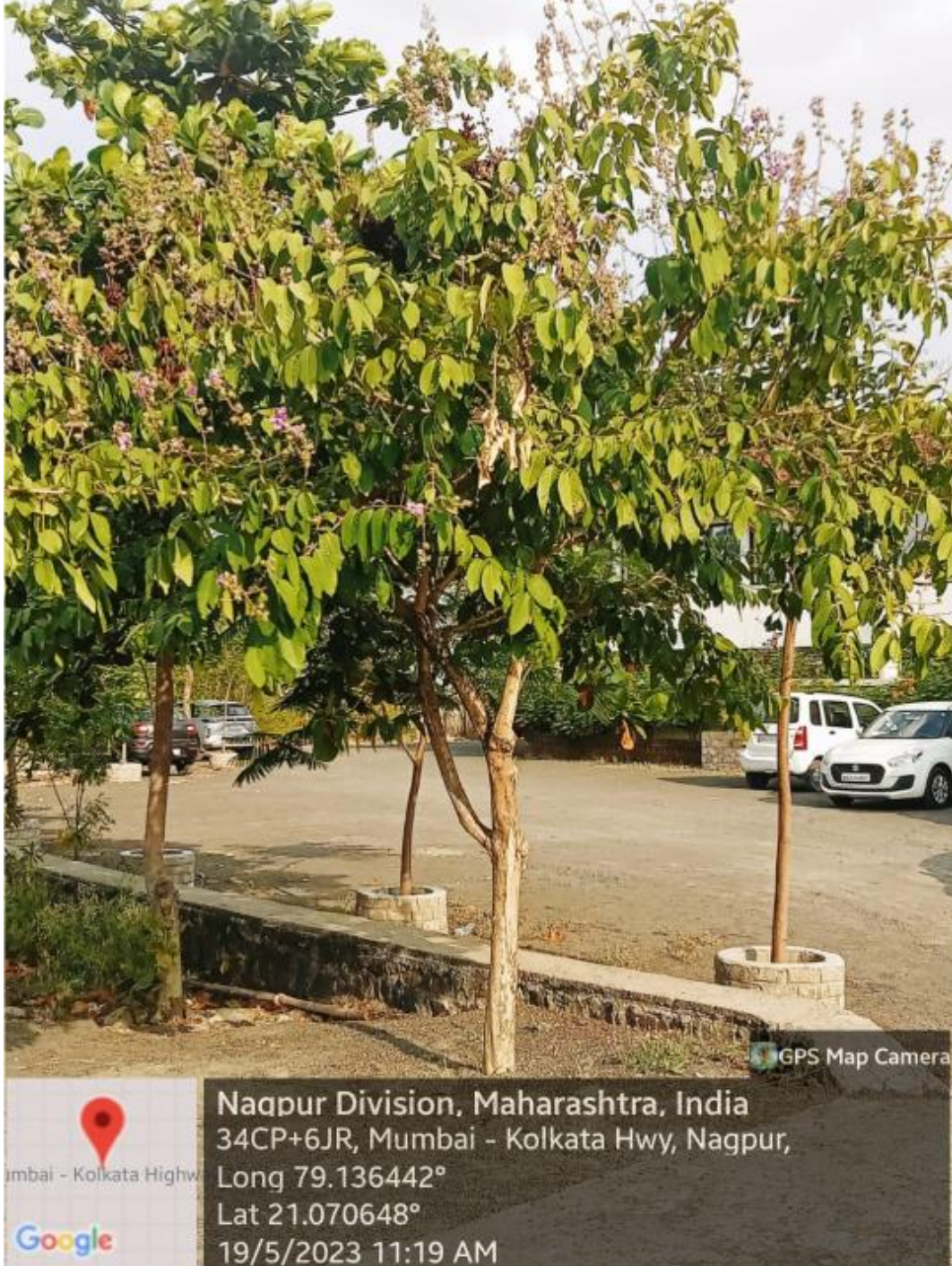
Umbar	Ficus infectoria	2
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Common name	Botanical name	No. of trees
Peru/Guava	Psidium guajava	12



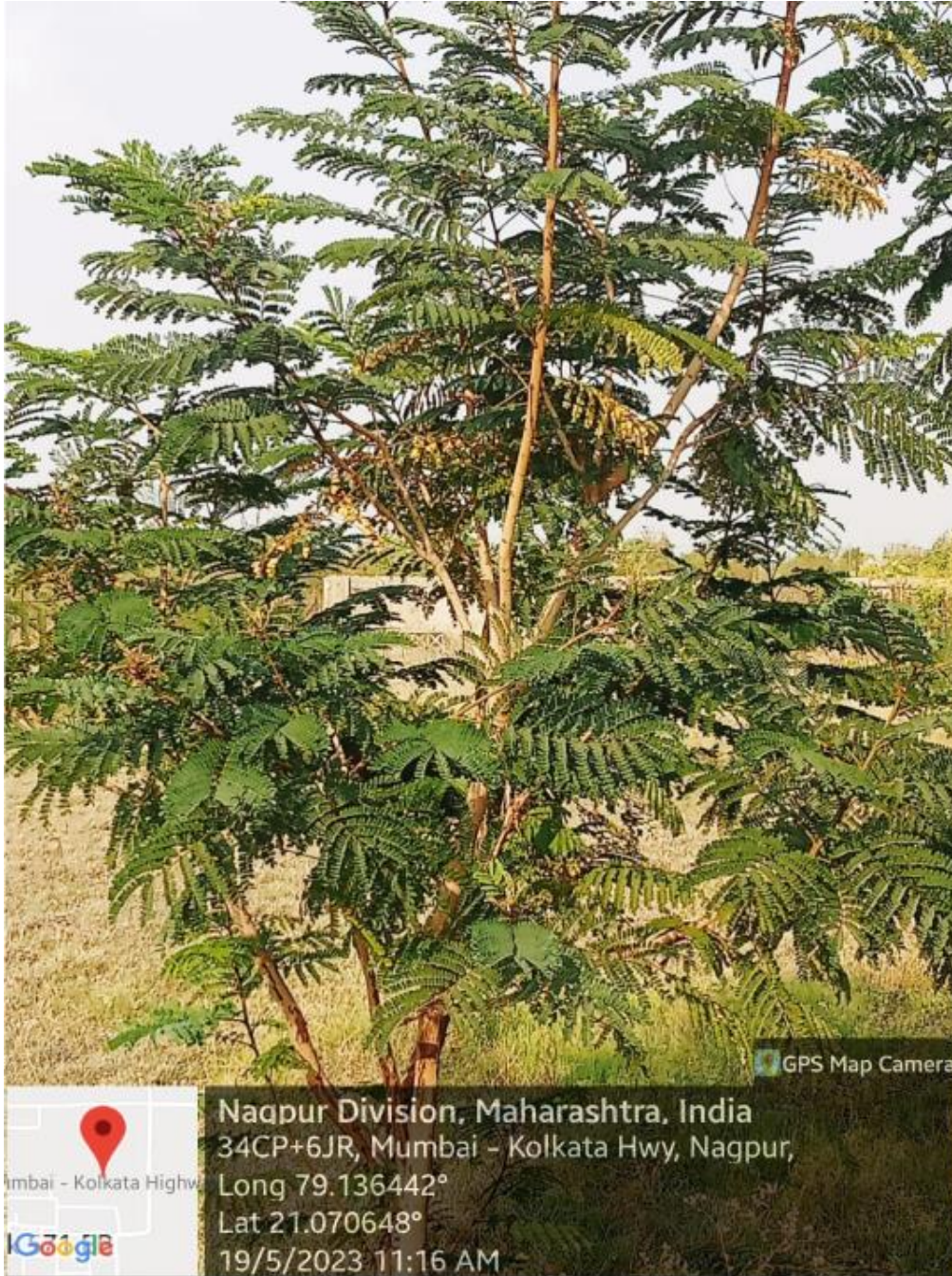
Common name	Botanical name	No. of trees
Badam	Prunus dulcis	2



Common name	Botanical name	No. of trees
Pride of India	Lagerstroemia speciosa	2



Common name	Botanical name	No. of trees
Bauhinia	Bauhinia variegata	4



Common name	Botanical name	No. of trees
Pelto forrum	Pelto ferrugeniun	9



Common name	Scientific name
Snake	Naja naja



Common name	Scientific name
House Lizard	Hemidactylus frenatus



Common name	Scientific name
Scorpion	Scorpiones



Common name	Scientific name
chameleon	Chamaeleonidae



Common name	Scientific name
Yellow Sunbird	Cinnyris jugularis

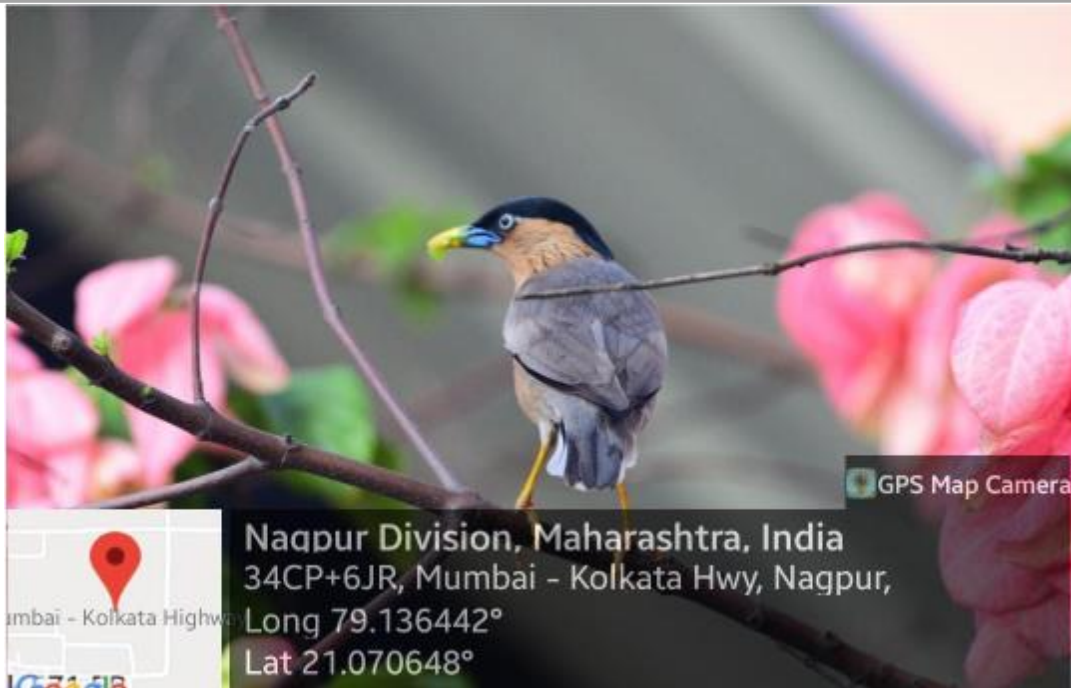




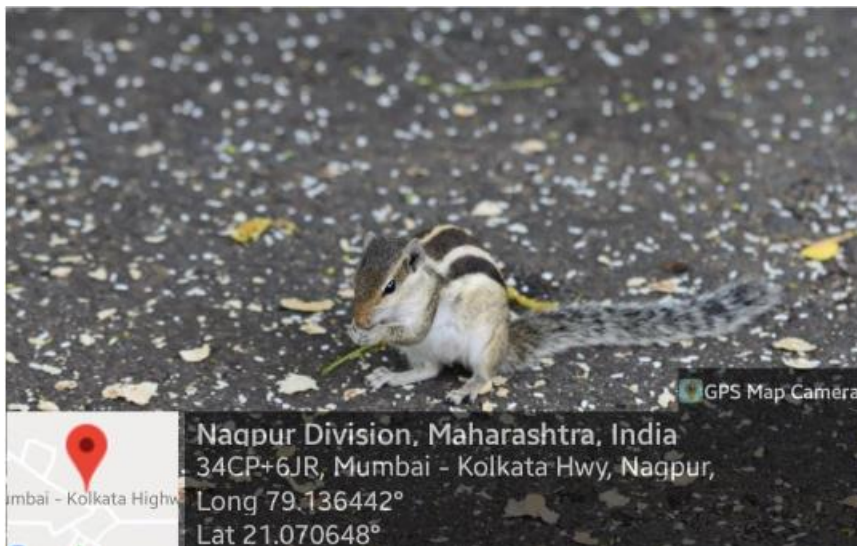
Common name	Scientific name
House crow	Corvus splendens



Common name	Scientific name
Toad	Bufo melanostictus



Common name	Scientific name
Brahminy starling	<i>Sturnia pagodarum</i>



Common name	Scientific name
Squirrel	<i>Funambulus palmarum</i>



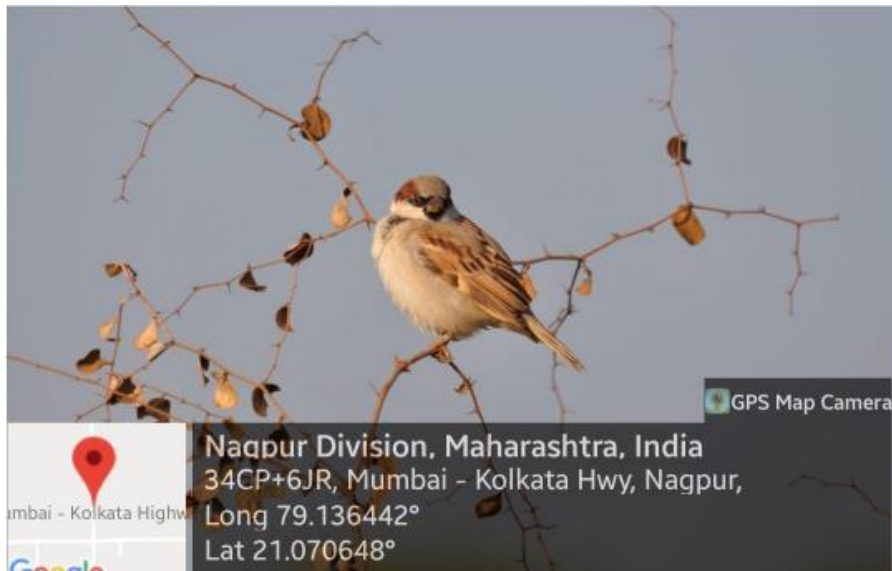
Common name	Scientific name
Yellow footed green pigeon	Treron phoenicopterus



Common name	Scientific name
purple-rumped sunbird	Leptocoma zeylonica



Common name	Scientific name
Mayna	Acridotheres tristis



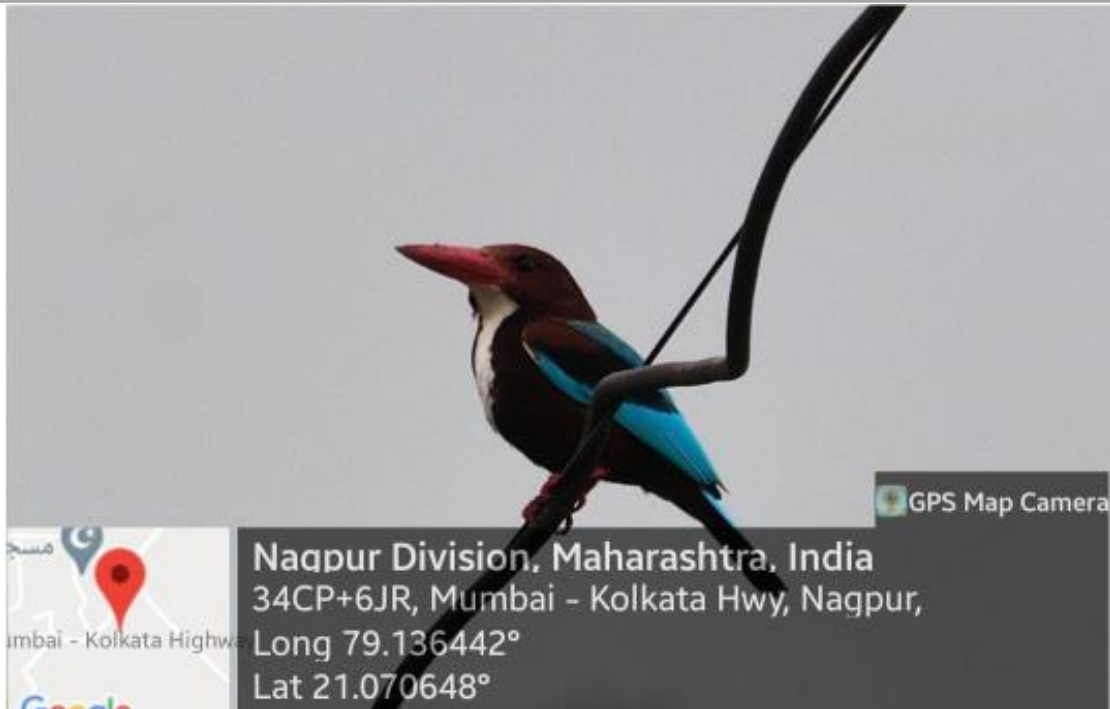
Common name	Scientific name
Sparrow	Passer domesticus



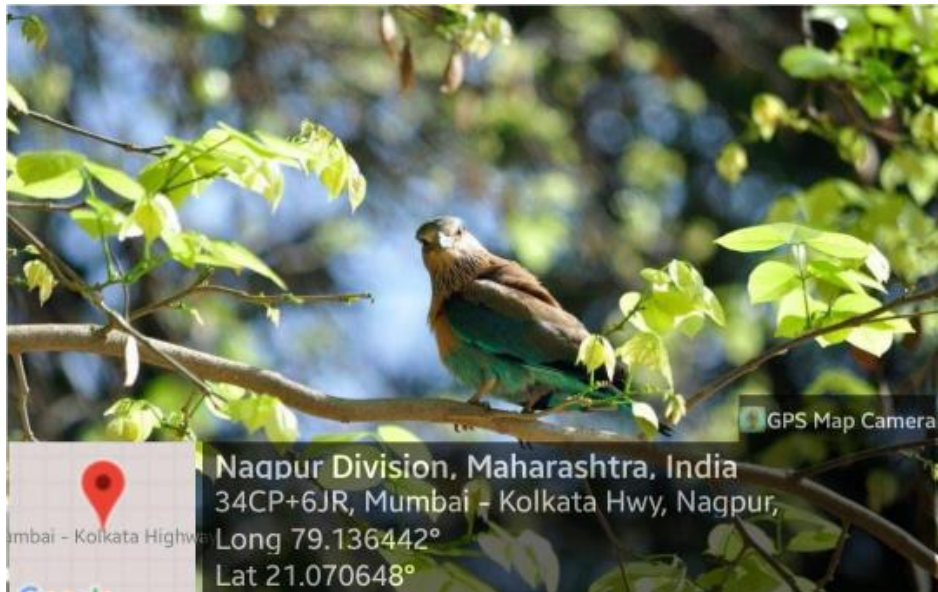
Common name	Scientific name
shikara	Accipiter badius



Common name	Scientific name
Robin	Saxicoloides fulicatus



Common name	Scientific name
King fisher	Alcedo atthis



Common name	Scientific name
Babbler	Timaliidae



Common name	Scientific name
Parrot	Psittacula krameri



Common name	Scientific name
Indian Spotted dove	Streptopelia chinensis



Common name	Scientific name
Owlet	Strigiformes



## ROUTINE GREEN PRACTICES

Every year the college celebrates World Environment Day, World Water Day, and Ozone Day in the campus. The focus of these programs was to provide awareness to the students about the importance of the environment, its conservation and sustainable use of environmental resources. The programs are conducted through seminars, poster presentation, quiz competition debates etc.



In keeping with its initiative to make green purchases, the institute opted to use recycled sari bags to distribute books to the incoming batch of 2021-22. The colorful bags are produced by the Mahila Bachat Ghat, Nagpur.



## CONCLUSION

This audit involved extensive consultation with all the environmental college team, interactions with key personnel on wide range of issues related to Environmental aspects. The audit has identified several observations for making the campus premises more environmentally friendly. The audit team opines that the overall site is maintained well from an environmental perspective. There is no major observations but a few things that are important to initiate urgently are phaseout air conditioners with eco-friendly refrigerants and periodic inspection of buildings housekeeping and environment policy.