7.1.3

Environment audit and Energy Audit reports for previous year under assessment

Global Benchmarking Inc.

Company: Greater Noida Institute of Technology
Address: Plot No 7, Knowledge Park II, Greater Noida, Gautam Budh Nagar-201310, Uttar Pradesh
Scope :   PROVIDING EDUCATION BACHELOR OF TECHNOLOGY CIVIL ENGINEERING, COMPUTER SCIENCE & ENGINEERING, INFORMATION TECHNOLOGY,ELECTRICAL ENGINEERING,MECHANICAL ENGINEERING, ELECTRONICS AND COMMUNICATIONS ENGINEERING, MASTER OF COMPUTER APPLICATION, MASTER OF BUSINESS ADMINISTRATION.
Standard: ISO 14001:2015 (EMS)

The audit covered documentation, implementation and maintenance of the EMS which can be verified by Policy & Objectives and through the interviews and interactions with the key personnel involved. Opening meeting started at 9.30 on dated 15.04.2020 at the site Plot No 7, Knowledge Park II, Greater Noida. , the Top Management and HOD were present .

BRIEF DETAIL ABOUT ORGANIZATION

Greater Noida Institute of Technology (GNIOT) is one of the premier Institutions in the field of Technical and Management Education. It has been formed by Shri Ram Educational Trust, Noida on no profit basis with a firm determination and commitment to foster a holistic approach towards the development of Engineering and Management Education. The institute was started in the year 2001

During the audit the Internal Audit and MRM was verified, The Manual GNIOT/EM/01 and Procedure GNIOT/EPM were also evident. Aspect Impact Analysis GNIOT/EMS/AI/10 was evident and Hazard Analysis GNIOT/EMS/HA/15 was verified.

The control of documents and records also evident Master list of Documents GNIOT/F/MS/04 and Master list of Records GNIOT /F/MS/05.
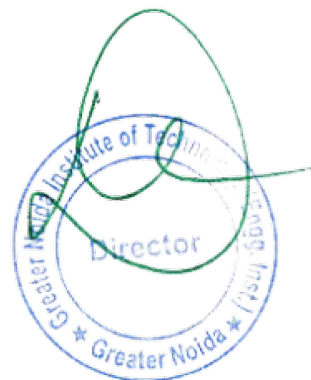
Non Conformities
Major:Nil
Minor: Nil
Observation:1
Installation of Solar Panel in the premises

Auditor' Signature & Date

Office: C-16, Sector-2,Noida-201301, U.P. ,
Email:sales.globalbenchmarking@gmail.com

Stage 2 Audit Report EMS (ISO 14001:2015)	

Name of the Organization	Greater Noida Institute of Technology(Engineering Institute)
Address	Plot No 7, KP:2, Greater Noida, Uttar Pradesh
Site Address (If any)	Same
No. of Employees	300
E mail id	info@gniot.net.in
Contact Person	Mr. Kapil Kumar
Telephone/Fax	0120-2328214
Scope	Engineering Institute
IAFCode	

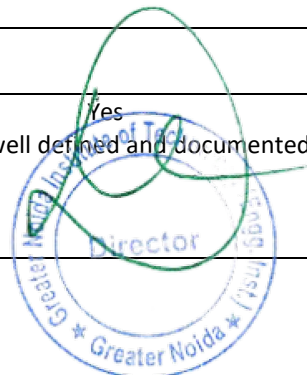| Audit Team	`Lead Auditor: Mr. Kapil Auditor/TE: Nil	Audit Duration Manday(s): 10	Date of Audit: 10.04.2020
Purpose of Audit	To verify the implementation of the Environmental Management System as per the Standards Requirement, verification of records for the conformity of the implementation.		

	Observations
1	Management Program Leads were knowledgeable about their programs, how the review and updating process works, and how to address changes as they occur. They had all received some form of training specific to their program. However, some Management Program Leads feel they do not have influence on some of the objectives and targets.
2	The EMS Coordinator was successful in training the majority of employees on the Region's EMS
3	Staff interviewed at random were familiar with the EMS, could define what they saw as their role in the system, and they were all aware of and had taken EMS training.
4	EMS data could be repositioned to be more easily assessable to the public on Region 7's internet site. This would allow others to more effortlessly model regional stewardship activities.

Non-Conformities Raised

1 Minor 0 Major Non conformance identified in the Stage 2 audit, details of Non Conformance in CAR From *(Note: the detailed NC is to be submitted and accepted by the client Please respond by using your own corrective action form and include the root cause analysis with systemic corrective action. Failure to include root cause analysis with systemic corrective action will result in your responses being rejected by Lead Auditor*

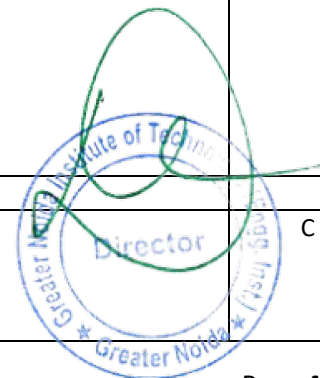| CLAUSE NO.	REQUIREMENTS	EVIDENCE	REMARK
4.1	**Understanding the organization & its context**		NC, Minor, Major, OFI
	-Has the organization determine internal/external issues which can affect environmental conditions?	Yes File: GNIOT/En/02/v0/2019-20	C
4.2	**Needs & expectations of Interested Parties**		
	-who are the interested parties identified? -what are their relevant needs & requirements? -what are the needs for compliance & obligation?	Yes	C
4.3	**SCOPE OF EMS**		
	-Is the documented scope contain type of product / services? -Does it cover internal / external issues identified? -Does it cover obligations organization unit & physical boundaries?	Yes File: GNIOT/Org/18/v0/2019-20	C
4.4	**ENVIRONMENTAL MANAGEMENT SYSTEM**		
	-Are the processes needed for implementation of EMS & their interaction identified & documented?	Yes	C
5.0	**LEADERSHIP**		
5.1	**LEADERSHIP & COMMITMENT**		
	-Are the EMS policies & objectives established? -Are the resources requirements identified & fulfilled?	Yes Policies well defined and documented	C

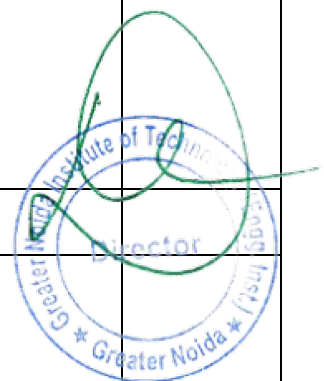|			
	-How the support extended for continual improvements, communication, & effectiveness of EMS?		
5.2	**EMS POLICY**		
	-Is the documented policy appropriate to the purpose of organization? -Does it provide framework for objectives? -Does it include the commitment to prevent pollution, compliance of obligation & continual improvement? -How is the policy communicated internally/externally?	YES	C
5.3	**ORGANISATIONAL ROLES, RESPONSIBILITIES & AUTHORITIES**		
	-To whom is the EMS implementation, improvement & reporting to Management responsibility assigned?	Yes	C
6.0	**PLANNING**		
6.1.1	**RISKS & OPPORTUNITIES**		
	-Does the planning cover context, interested parties issues, scope, aspects & compliance of obligations? -Does the risks & opportunities documented?	Yes	C
6.1.2	**ENVIRONMENTAL ASPECT**		
	-Are the environmental aspect /impact documented with its criteria to identify significant aspects?	Yes	C
6.1.3	**COMPLIANCE OF**		

	OBLIGATION		
	-Does all obligations identified, documented & compliance done?	Yes	C
6.1.4	**PLANNING OF ACTION**		
	-Does the planning cover aspects, compliance of obligation , risks & opportunities & its evaluation for improvements?	Yes	C
6.2.1	**OBJECTIVES**		
	-Are the documented objectives SMART & consistent with the policy? -Are objectives communicated, monitored & updated	Yes	C
6.2.2	**PLAN ACTION TO ACHIEVE OBJECTIVES**		
	-Does EMP contain actions, resource, responsibilities & time frame?	Yes	C
7.0	**SUPPORT**		
7.1	**RESOURCES**		
	-Are the resources needed identified to achieve the objectives?	Yes	C
7.2	**COMPETENCE**		
	-Does the competence required / to be developed documented?	Yes	C
7.3	**AWARENESS**		
	-How is awareness created about policy, significant aspect, benefit of objectives, environmental performance, compliance of obligations to all concerns?	Yes	C
7.4	**COMMUNICATION**		
	-Does what, when, whom & how about communication documented?	Yes	C

	-Are the record of it maintained (internal/external communication)?		
7.5	**DOCUMENTED INFORMATION**		
	-What are the mandatory/ necessary information documented? -Are the documents update, identifiable, *approved* & reviewed ? -Are the documented information controlled for distribution, assessed, retrievable, in proper storage, preserved &legible? -Are the external origin documents controlled?	Yes	C
8.0	**OPERATION**		
8.1	**OPERATIONAL PLANNING & CONTROL**		
	-Is the criteria for operating processes documented? -Is the control of the processes in accordance with the operating criteria implemented?	Yes	C
8.2	**EMERGENCY PREPAREDNESS & RESPONSE**		
	-Does all the emergencies identified & their preparedness documented? -Does the preparedness tested for response periodically?	Yes	C
9.0	**PERFORMANCE EVALUATION**		
9.1	**MONITORING, MEASUREMENT, ANALYSIS & EVALUATION**		
9.1.1	-Are the monitoring requirement identified?	Yes	C

	-Are the monitoring evidences documented? -Are the monitoring equipments calibrated?		
9.1.2	**EVALUATION OF COMPLIANCE**		
	-Are the compliances of obligations done? -Are the records of compliance retained?	Yes	C
9.2	**INTERNAL AUDIT**		
	-Is the internal audit planned & schedule prepared? -Is the audit result documented & reviewed by management	Yes	C
9.3	**MANAGEMENT REVIEW**		
	-Is the management review meeting planned as per agenda? -Is the management review meeting record maintained? -Is the desired output achieved?	Yes	C
10	**IMPROVEMENT**		
10.2	**NON CONFORMITIES & CORRECTIVE ACTION**		
	-Are all identified non conformities recorded (other than audit NC) for corrective actions? -Are the records of it maintained?	Yes	C
10.3	**CONTINUAL IMPROVEMENT**		
	-Are all continual improvements increases the environmental performance?	Yes	NC
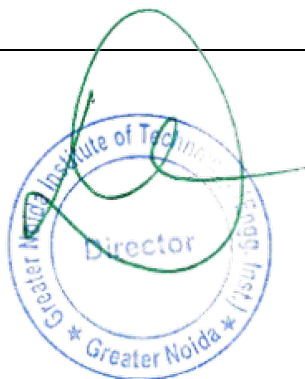
Summary of the Audit Team

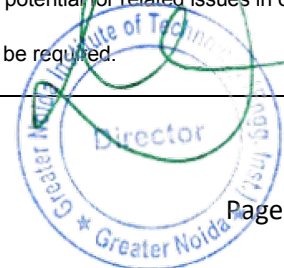| |
|---|
| Audited Firm: Global Benchmark |
| Address: C-16, Sector-2,Noida-201301, U.P. |
| Standard: ISO 14001:2015 |

A.   **Stage of audit:**

☒	Initial Certification
☐	Follow Up Audit
☐	Surveillance Cum Transfer
☐	Modification
☐	Renewal
☐	Upgrade From
☐	Other

B.   **Recommendation:**

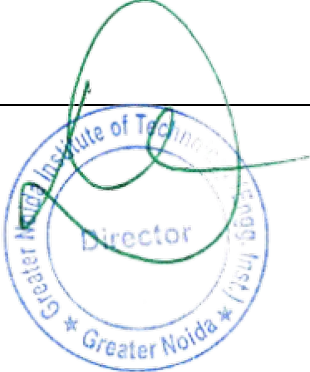|	
☒	Issuance of Certificate
☐	Refusal of the Certificate
☐	Follow Up audit
☐	modification of the current certificate (registration no. and expiration date remain unchanged)
☐	other :

C. Reason

☒	**The Environmental Management system complies with the requirements of the reference standard:** Congratulations, on the basis of the above summary, Lead Auditor is pleased to put forward a recommendation for conducting next stage of assessment.
☐	**The Environmental Management system complies with the requirements of the reference standard with exception of minor NC:** Congratulations, Lead Auditor is pleased to put forward a recommendation for registration of Organization upon off-site verification of closure of all issues within 60 days from the date of Stage 2 audit. Responses to the non-conformances should be submitted and must include supporting evidence of closure to allow for off-site verification/ In responding to the non-conformances, the organization should consider the root cause of the non-conformance and the potential for related issues in other parts of system. If all non-conformances are not closed within 60 days, a full reassessment may be required.

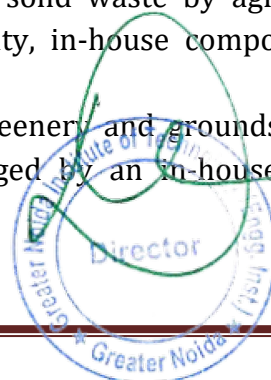|	
☐	**Evidence of major non conformities:** Organization is not recommended for next assessment at this time. A follow-up assessment will be scheduled to allow for on-site verification and closure of all issues within 60 days from the date of Stage 2. Once all non-conformances are closed, the recommendation for registration can be made. Responses to the non- conformances should be submitted to DAS within 45 days and must include supporting evidence. In responding to the non-conformances, the organization should consider the root cause of the non-conformance and the potential for related issues in other parts of system. If all non-conformances are not closed within 60 days, a full reassessment may be required.
☐	**Not Recommended:** Organization is not recommended for next assessment at this time. A Stage 2 will be required. To progress your application for registration, please respond to each non-conformances, with a plan showing proposed actions, timescales and responsibilities for resolution. The organization should consider the root cause of the non-conformance and the potential for related issues in other parts of your system.
	Proposed Audit Date for Surveillance Audit (20.04.2021)

Sign Off : Date 20.04.2020	
Report Submission	Client Acceptance for Report
Name of Auditor Mr. Kapil Signature:	Name: Mr. Kapil Kumar Sign Designation: Asst. Professor

Waste Management

Types of Waste on Campus

To create effective waste management plans, the campus first needs to know the types of waste they produce. Below, we have compiled a list of various kinds of waste commonly generated on institutional campus:

1. **Food Waste -** Campus does not generate food waste as there is not hostel canteen and mess. College has tuck shop with tea & coffee facility so there is food waste generation.
2. **Recyclable Paper, Cardboard, Plastic, Glass and Cans -**Campus tends to produce vast quantities of these recyclables. Even in the digital age, many students, professors and staff members still prefer handwritten notes and end up with piles of unwanted paper once their courses and projects are complete. The snacks so essential to late-night studying or socializing tend to come in recyclable plastic, glass or aluminium containers. And shipments of necessary items throughout the year are likely to arrive in recyclable plastic and cardboard packaging. Quantitative analysis should be carried out to reduce waste in the coming academic sessions. Have an MoU with Jaagruti Paper Recycle Services.
3. **E-Waste -** As campus continually upgrade their computing facilities and office computers to keep up with the latest technology, the old computers have to go somewhere. So do old printers, phones, copy machines and other electronics that receive upgrades over the years.
4. **Maintenance Waste -** In the maintenance department, spent on paints, solvents, adhesives and lubricants all form potentially hazardous waste. Because they are difficult to recycle, spent on incandescent light bulbs usually become landfill waste. Spent on fluorescent light bulbs, which contain small amounts of mercury, typically require special handling because of the environmental and health risks they pose.
5. **Furniture -** Furniture waste of the campus has a couple of different sources. The campus itself may also get rid of old furniture as it modernizes its classrooms, cafeterias, computer labs and study spaces. Annually sold to a junk dealer.
6. **Books/Magazines/Newspapers -** Books accounted for solid waste generation and college often generate tons of textbook waste. As courses upgrade to new editions, they may end up throwing their newly obsolete textbooks into the garbage if donation programs cannot use them. Students, too, may find it more convenient merely to throw away their books at the end of the year rather than donating or reselling them.
7. **Municipal Solid Waste -** The College is managing solid waste by agreement with Greater Noida based state waste management facility, in-house composting system (vermicomposting) and conventional composting.
8. **Horticulture Waste** – College campus has lavish greenery and grounds that results from significant horticulture waste which is managed by an in-house composting system.
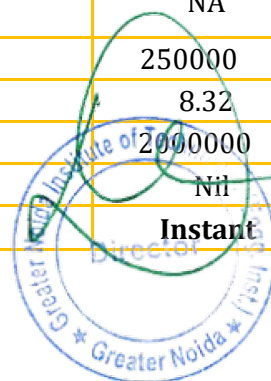
Energy Conservation

List ten ways that you use energy in your institute. (Electricity, LPG, firewood, others). Using this list, try to think of ways that you could use less energy every day.	Electricity used in classrooms, labs, library, canteen, washrooms, staff rooms, and office.
Are there any energy-saving methods employed in your institute? If yes, please specify. If no, suggest some	Yes, a Renewable source of energy through a solar plant (291kWh) is about to be operational.
How many CFL/LED bulbs have your institute installed?	100 % of Total Conventional bulbs are replaced by LED/CFL Lights. Management is in process of changing tube lights to LED lights.
Do you run "switch off" drills at the institute?	Yes
Are your computers and other equipment's put on power-saving mode?	Yes, In Practice
Does your machinery (TV, AC, Computer, weighing balance, printers, etc.) run on standby modes most of the time? If yes, how many hours?	Yes, approx. 6 hours

Energy Share	kWh	Percentage
Electric Grid kWh	178938.75	60
Solar PV-kWh*	39224.14	40
HSD-Eq.kWh**		
LPG Eq. kWh***		
Total -kWh	**218162.89**	**100**

Details of Solar Power Plant

	Energy Savings potential -Annual -Solar PV-Installed system		
S. No	**Description**	**Quantity**	**Unit**
1	Capacity of installed system	291.00	kWh
2	Annual target of generation	250000	kWh
3	Actual generation *(Not operational because ofbuilding expansion)*	NA	
4	Loss of Generation	250000	kWh
5	Tariff of Electricity INR	8.32	Per/unit
6	Projected Annual savings in Energy	2000000	kWh
7	Investment	Nil	
	Pay Back	**Instant**	

Water and Wastewater Management

|	
List uses of water in your institute	Basic use of water in campus: Drinking – 100 KL/month Gardening – 90 KL/month Kitchen and Toilets – 660.6 KL/month Others – 225 KL/month Hostel – NA Total 1075.6 KL/month
How does your institute store water? Are there any water-saving techniques followed in your institute?	01 overhead water tank installed for storage of water with capacity – 50,000 Litres. And 7x2000 = 14,000 litres and 4x500 = 2,000 litres. Total 66,000 Litres in storage tanks. Close supervision of the water supply system. .
Locate the point of entry of water and the point of exit of wastewater in your institute. Entry and Exit-	Entry - Water comes from NOIDA supply andbore wells in the campus. Exit - From the kitchen, canteen facilities, laboratories, and urinals through covered drainage into the STP (75 KLD).
Write down ways that could reduce the amount of water used in your institute	Basic ways: • Close the taps after usage • Maintenance and monitoring of valves in supply system to avoid overflow, leakage and spillage • Water Conservation awareness for new students
Does your institute harvest rainwater?	Yes available
Is there any water recycling System?	Yes by STP treatment to gardening use

Note: All calculations are done assuming regular college (before pandemic) as if we calculate for the current year, then no practical data is available.

Air Quality Management

Are the Rooms in Campus are Well Ventilated?	Yes, as per National Building Code, guidelines
Window Floor ratio of the Rooms	Very Good, ample daylight utilization
What is the ownership of the vehicles used by your campus?	A combination of campus-owned and personal-owned vehicles
Provide details of school-owned vehicles?	College doesn't own any vehicles like bus, car, van, etc.
Specify the type of fuel used by your campus's vehicles	Not Applicable
Air Quality Monitoring Program	No
Details of DG Sets in campus	Yes, 1 DG Sets with capacities of (125 KVA.)All have
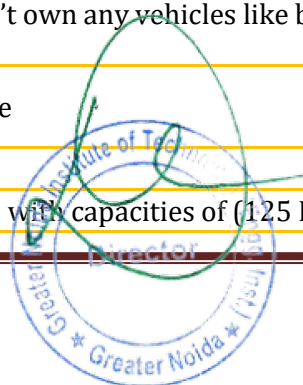
	acoustic enclosure canopy and stack height. The DG is being shared between morning and evening colleges.

Air Pollution Mitigation

The students are encouraged to use public transport. As per college environment policy, there is no vehicle movement allowed within the campus, except for goods and service movement periodically.

There is a designated space for parking of staff vehicles in the campus. Henceforth, air pollution due to vehicular movement is minimum. To reduce dust pollution, Paved roads and vegetation helps to a large extent. Also, Burning of waste within the campus is strictly banned.
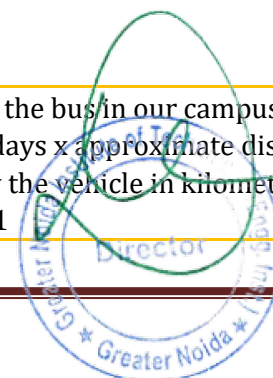
Environmental Legislative Compliance

Are you aware of any environmental Laws pertaining to different aspects of environmental management?	Yes, faculty members and the administrative team is well aware of national environmental laws.
Does your institute have any rules to protect the environment? List possible rules you could include.	Yes, innovative initiatives are being taken by campus to reduce pollution and go green.
Does Environmental Ambient Air Quality Monitoring conducted by the Institute?	No.
Does Environmental Water and Wastewater Quality monitoring conducted by the Institute?	Not Yet.
Does stack monitoring of DG set conducted by the Institute?	Yes, by NABL approved Laboratory.
Is any warning notice, letter issued by state government bodies?	Not Any, Half Yearly Compliance report submitted to statutory bodies.
Does any Hazardous waste generated by the Institute?	Yes, e-waste, waste oil, plastic waste are managed by MOU with an approved external agency

Carbon Footprint - Emission & Absorption

Total Carbon Footprint (CO_2 emission per year, in metric tons)

1. **Electricity used per year** **CO_2 emission from electricity**	(electricity used per year in kWh/1000) x 0.84 **218162.89** WA x 0.84 =210701.42/1000x0.84 =153.936 ton
2. **Transportation per year (Van)** **CO_2 emission from transportation (Bus)**	(Number of the bus in our campus x total number of days x approximate distance travelled by the vehicle in kilometres x 240 /100) x 0.01

	=(8x24x8x180/100)x0.01 =27.65 ton
180 working days per year, 0.01 is the coefficient to calculate the emission in metric tons per 100	
3. **Transportation per year (car) CO_2 emission from transportation (car)**	(Number of cars entering College campus x 2 x approximate distance travelled by the vehicle inside the campus in kilometres x 180/100) x 0.02 =(10x.1x2x180/100)x0.02 =0.072 ton

Total CO_2 emission per year cumulative by electricity usage + bus transportation + car transportation (153.936+27.65+.072) **= 181.658 ton**

BEST PRACTICES FOR GREEN INITIATIVES

All the lower hierarchy staff is well included in environmental awareness programmes and campaigns

- *Biodiversity Conservation* – Flora and fauna conservation programs and multiple environment awareness campaigns are organized by the College.

- *Tree Plantation Drives* – Tree Plantation Drives are organized regularly. Guests visiting the college on the Annual Day or other events are honoured by way of their contribution towards the Drive.

- *Ground Water Recharge* - 1 unit of Rain Water Harvesting System.

- *E-Waste Management* - Old computers and other e-waste are managed through CPCB authorized recyclers.

- *Solid Waste Management* – Waste segregation and management is carried out by third-party vendor and waste minimization practices (like avoiding / minimizing food waste, ban on plastic crockery, etc.) are adopted.

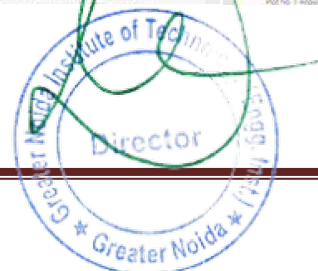- *Water Conservation - RO* wastewater is used in gardening and STP plant in campus.
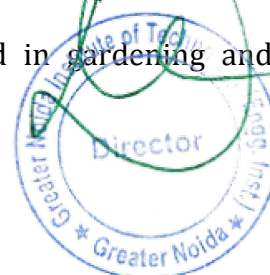
ANNEXURE – PHOTOGRAPHS OF ENVIRONMENT CONSCIOUSNESS

Weekly cleanliness drives

Various Environment Protection Activities inside the campus
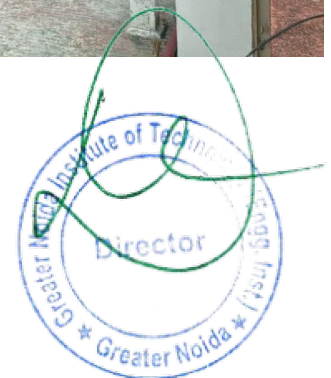
Health Awareness and Yoga day Celebrations
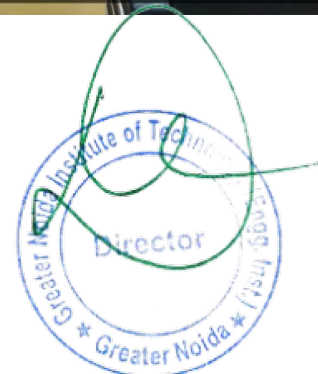
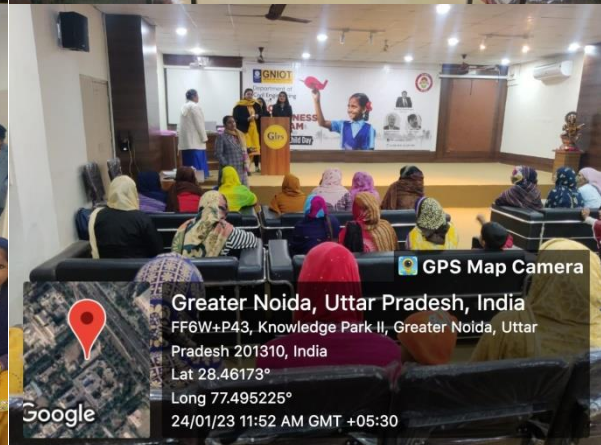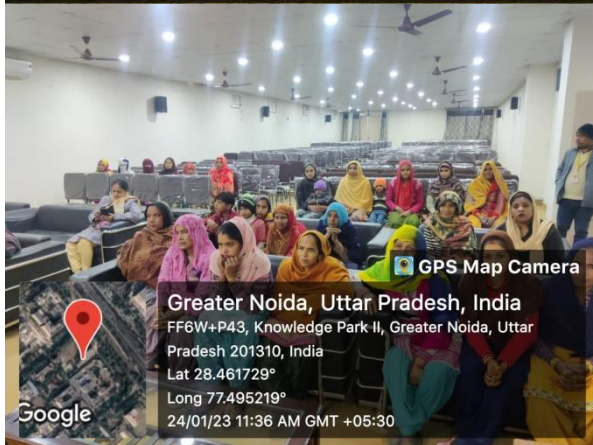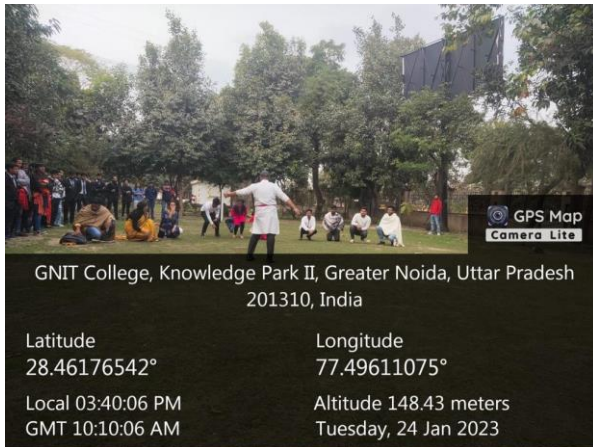## Lush green environmental friendly campus & Herbal Garden

Renewable energy resources (Solar System)and water purification system

Social Awareness Drive in nearby Area and one Adopted village Janpath

Social Club conducted awareness drive on Disposal and usage of sanitary pads by means of social media and by physically interacting with people.

Picture 5: The Photo Graph of CNG Buses for the Students in GNIOT.
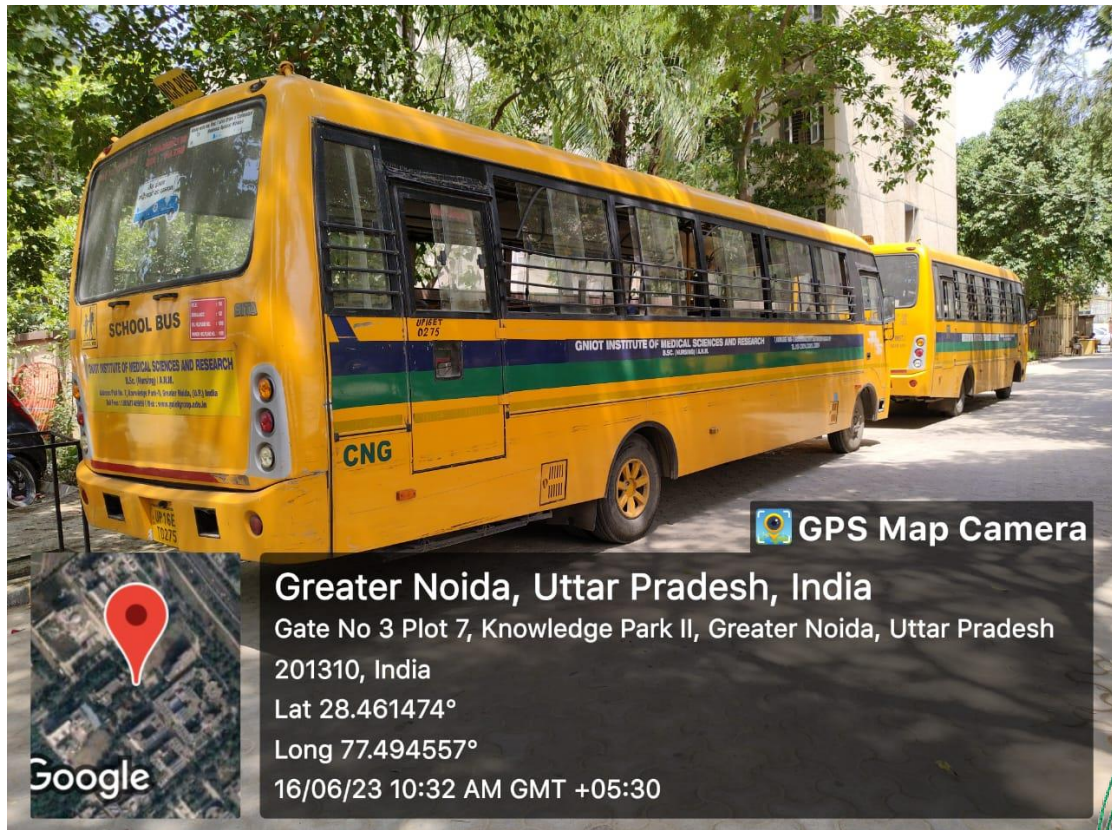
Picture 6: The Photo Graph of CNG Buses for the Students in GNIOT.

(Approved by AICTE, Delhi & Affiliated to Dr. A.P.J. Abdul Kalam Technical University, Lucknow)
Plot No. 7, Knowledge Park-II, Greater Noida, Gautam Buddh Nagar, Uttar Pradesh-201310
0120-2328214/15/16 | 1800 274 6969   director@gniot.net.in   www.gniot.net.in

Picture 7: The Photo Graph of CNG Buses for the Students in GNIOT.

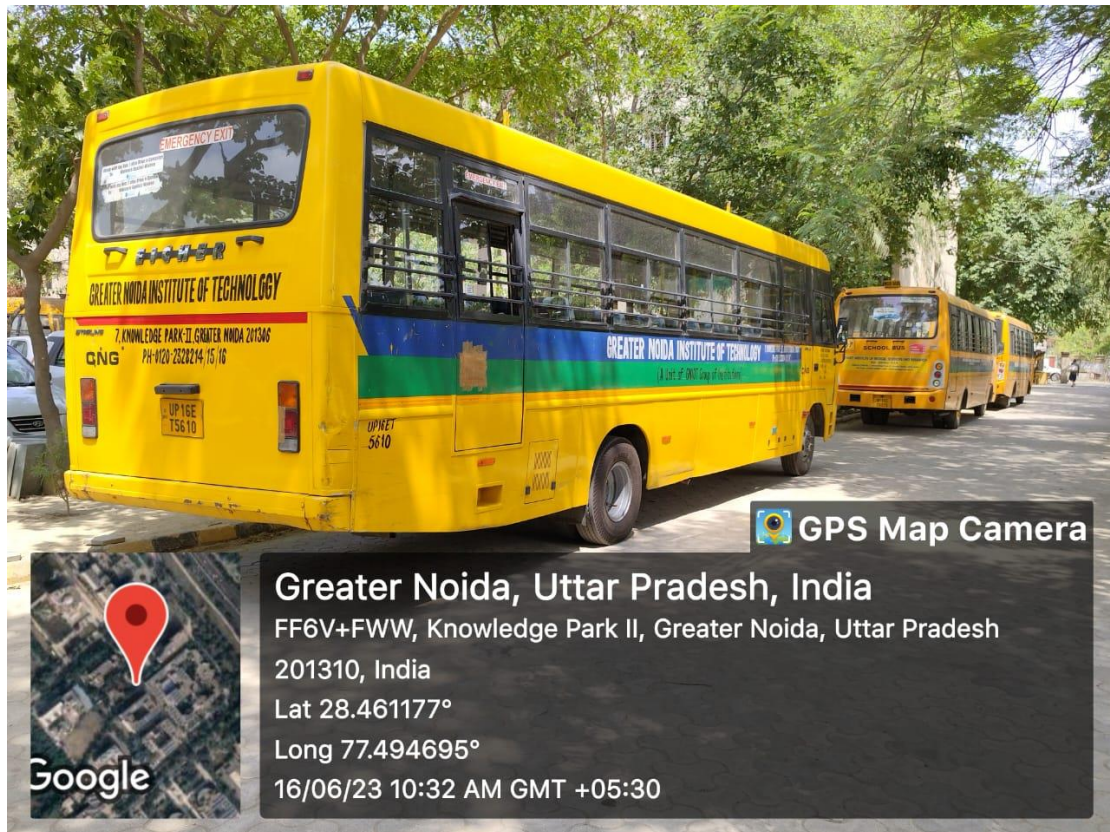**Picture 8:** The Photo Graph of Green Campus Initiative in GNIOT.

(Approved by AICTE, Delhi & Affiliated to Dr. A.P.J. Abdul Kalam Technical University, Lucknow)
📍 Plot No. 7, Knowledge Park-II, Greater Noida, Gautam Buddh Nagar, Uttar Pradesh-201310
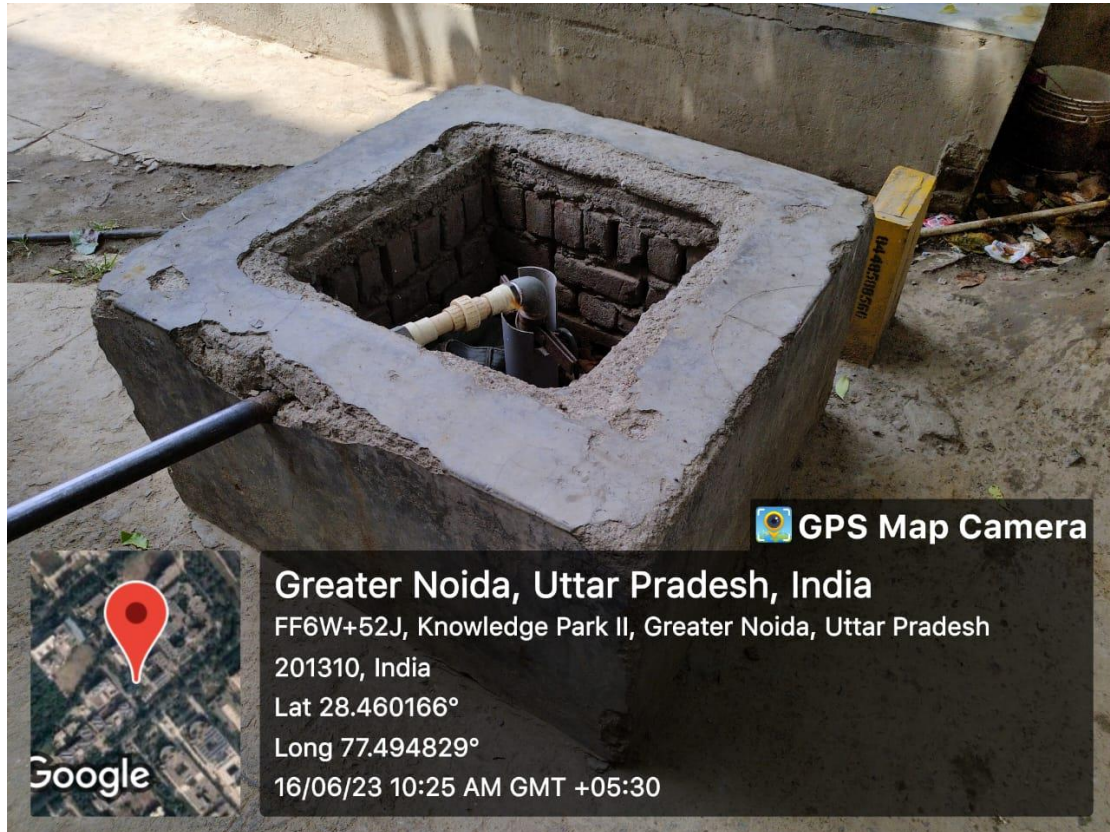📞 0120-2328214/15/16 | 1800 274 6969   ✉ director@gniot.net.in   🌐 www.gniot.net.in

Picture 9: The Photo Graph of Green Campus Initiative in GNIOT

Picture 10: The Photo Graph of Green Campus Initiative in GNIOT

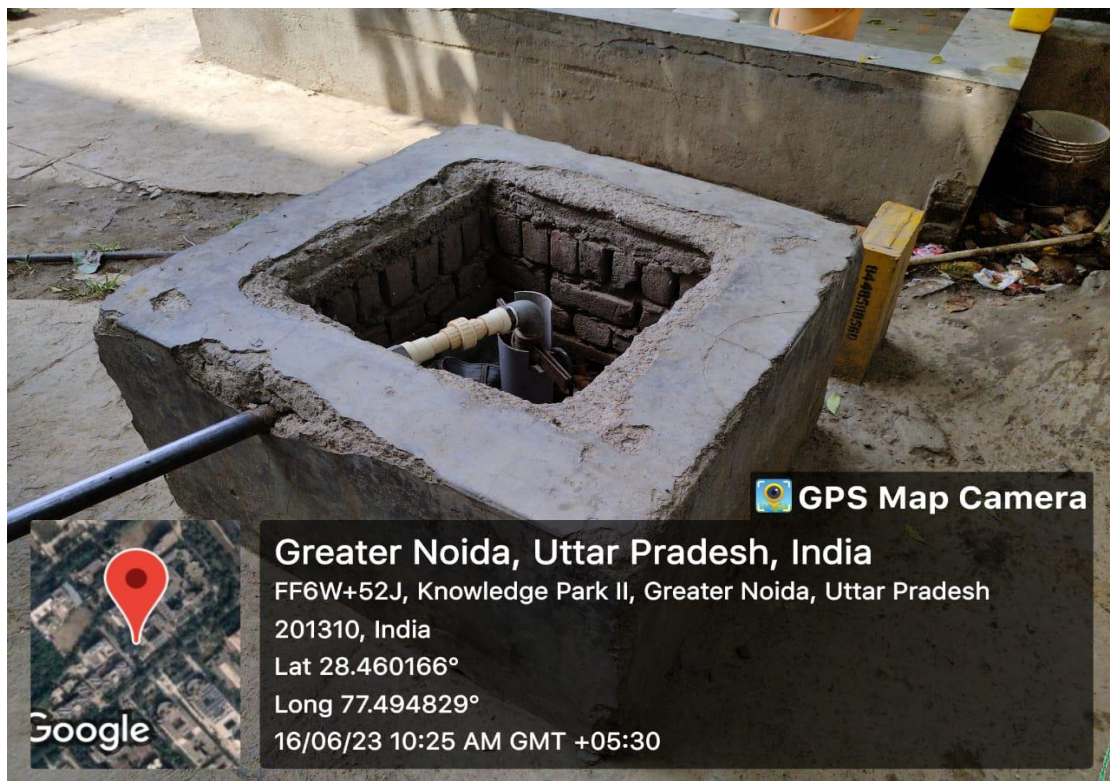(Approved by AICTE, Delhi & Affiliated to Dr. A.P.J. Abdul Kalam Technical University, Lucknow)
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0120-2328214/15/16 | 1800 274 6969   director@gniot.net.in   www.gniot.net.in
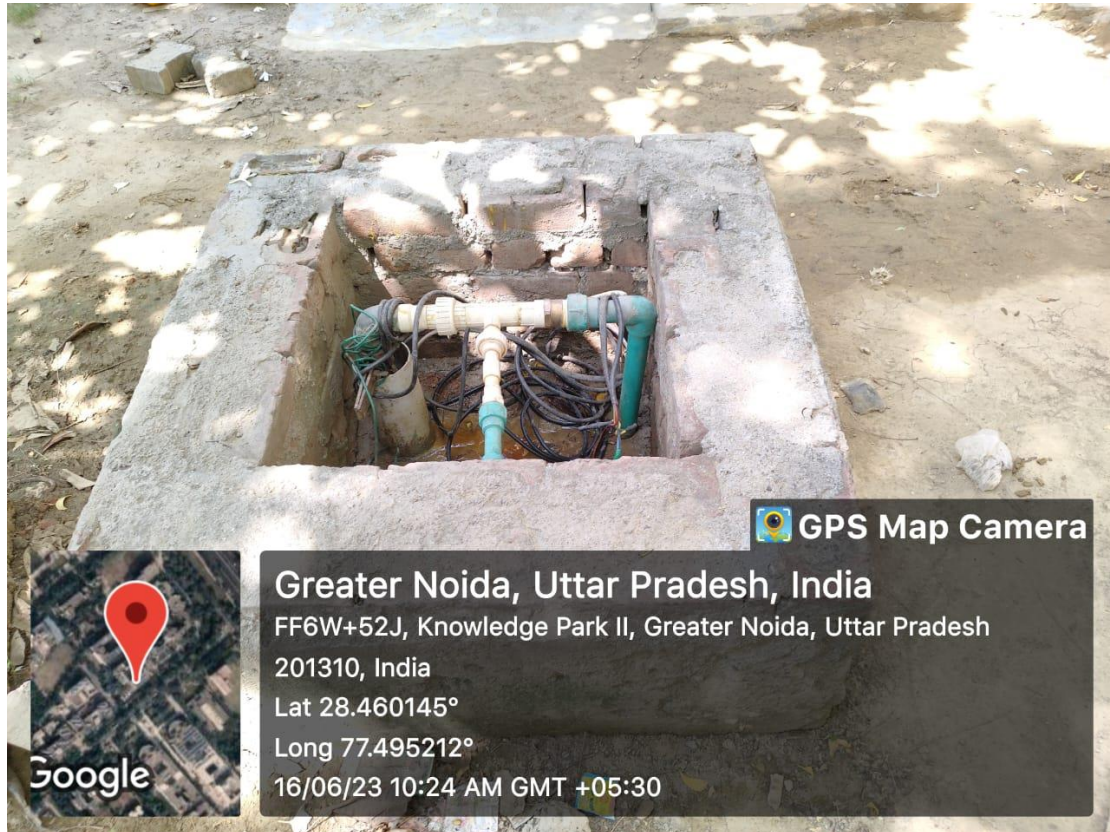
Picture 11: The Photo Graph of Bore well in GNIOT.

Picture 12: The Photo Graph of Bore well in GNIOT.

(Approved by AICTE, Delhi & Affiliated to Dr. A.P.J. Abdul Kalam Technical University, Lucknow)
Plot No. 7, Knowledge Park-II, Greater Noida, Gautam Buddh Nagar, Uttar Pradesh-201310
0120-2328214/15/16 | 1800 274 6969 ✉ director@gniot.net.in ⊕ www.gniot.net.in

Picture 13: The Photo Graph of Bore well in GNIOT.

Picture 14: The Photo Graph of Electric Scooter in GNIOT.

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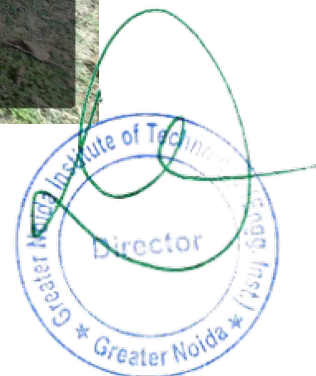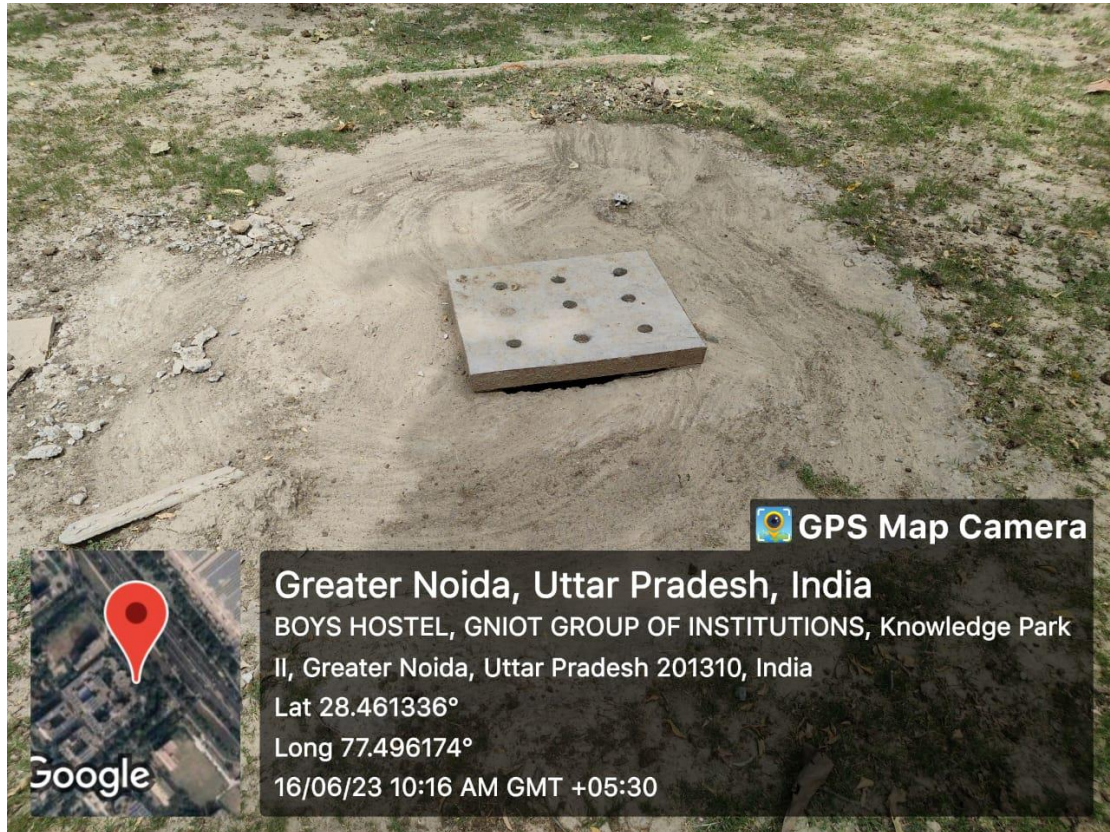
Picture 14: The Photo Graph of Electric Scooter in GNIOT.

Picture 15: The Photo Graph of Harvestingin GNIOT.

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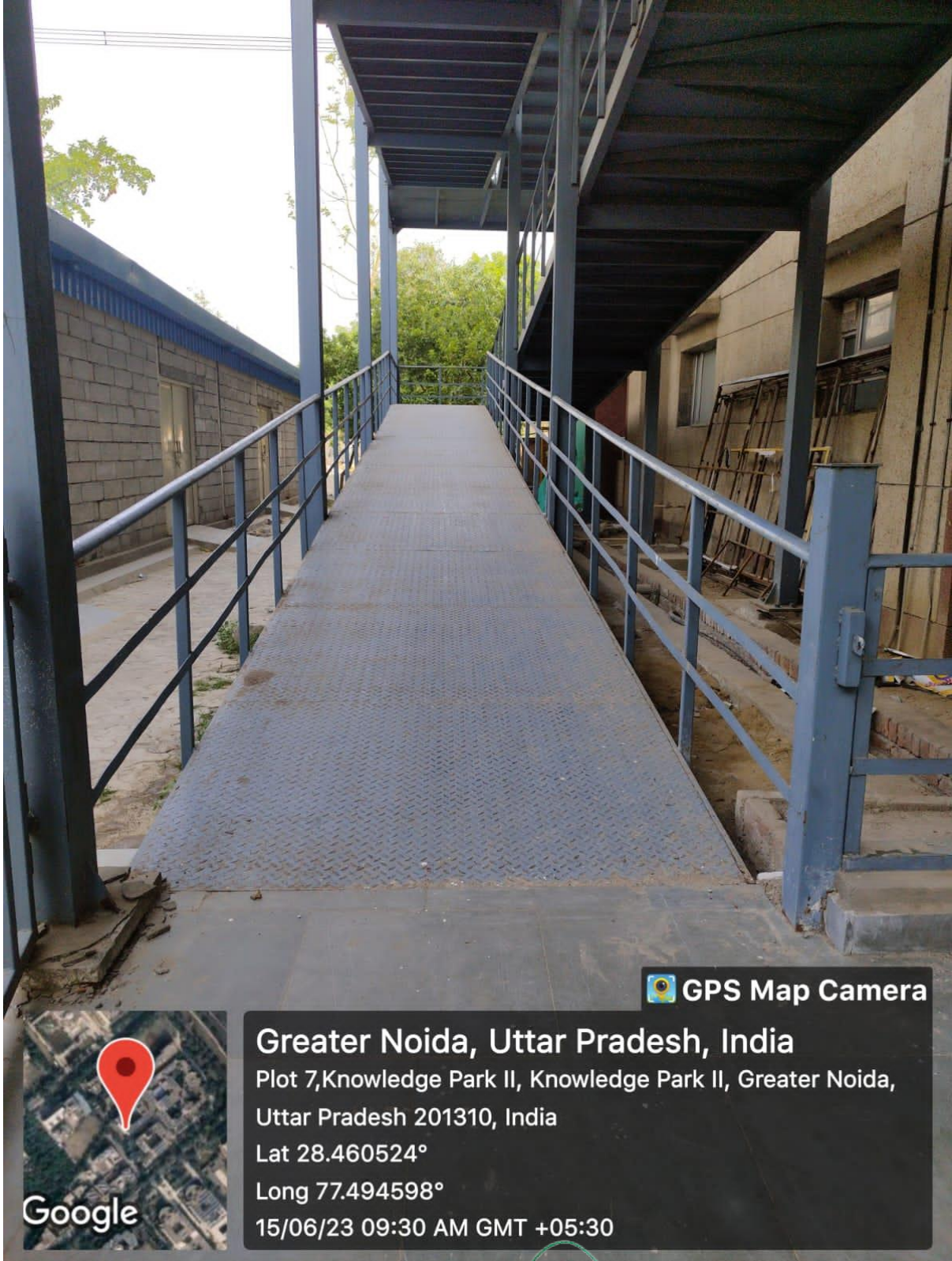
Picture 16: The Photo Graph of Harvesting in GNIOT.
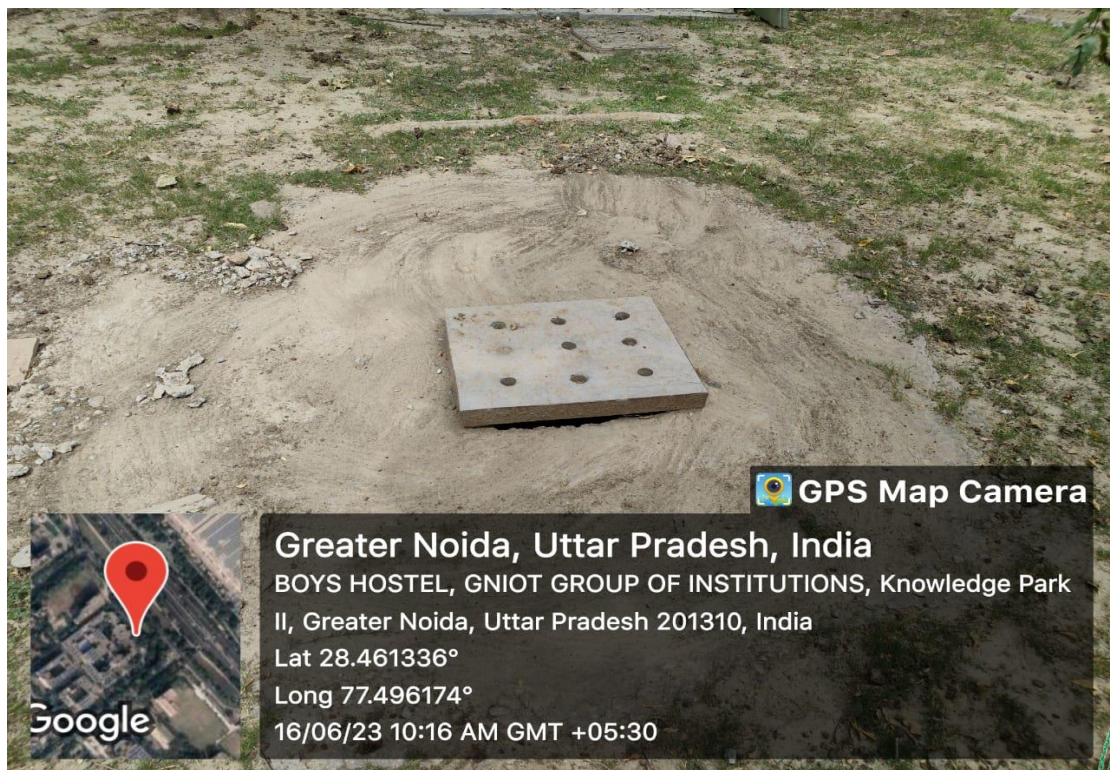
Picture 17: The Photo Graph of Harvesting in GNIOT.

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Picture 18: The Photo Graph of Ramp in GNIOT.

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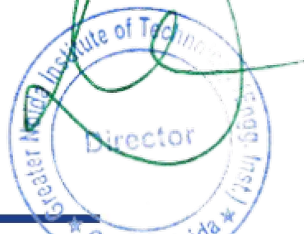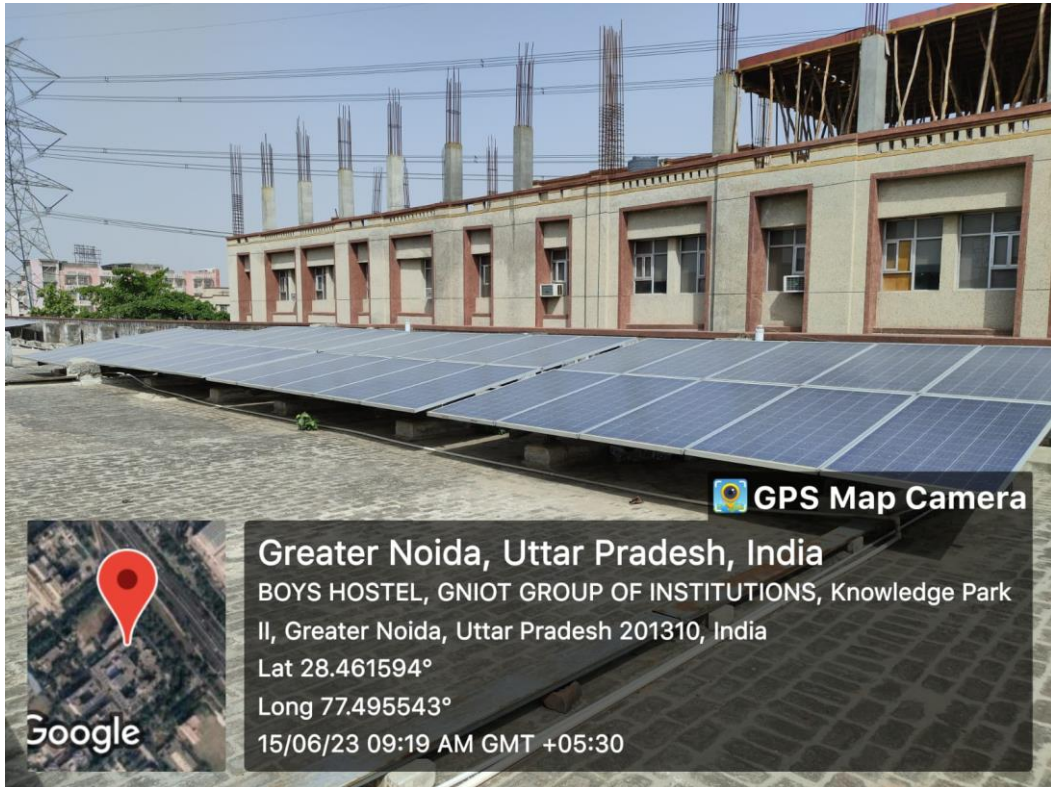
Picture 19: The Photo Graph of uses of Solar Panel in GNIOT.
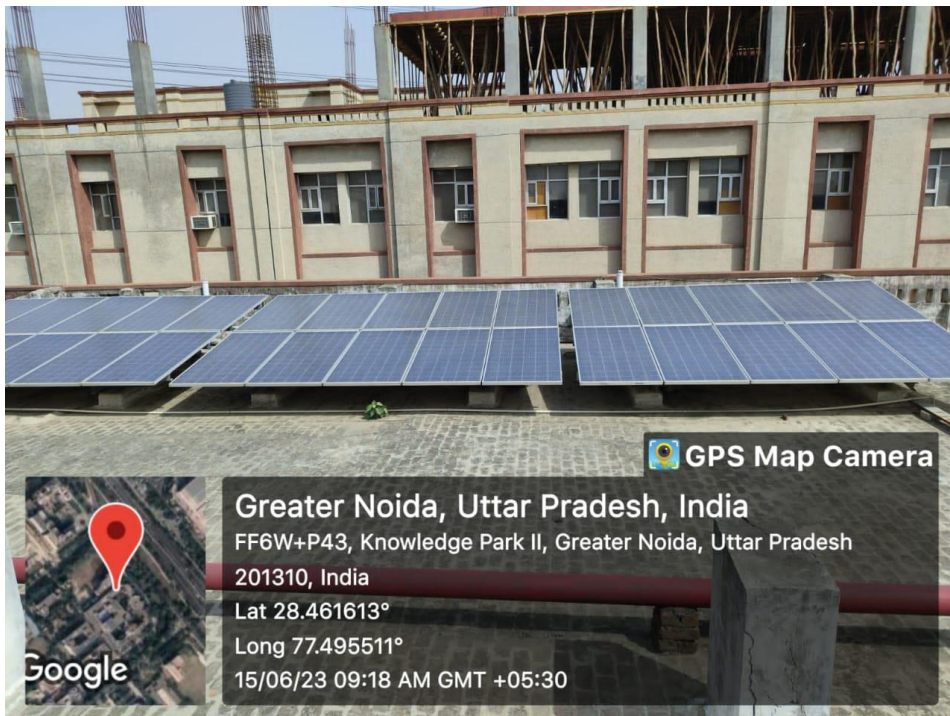
Picture 20: The Photo Graph of uses of Solar Panel in GNIOT.

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