## 7.2

## Best Practice - 1

## Environment and Social Consciousness



- Alternate Sources of Energy
- Lowering Carbon Emission
- Biodiversity on Campus
- Water Harvesting
- Water Conservation measures
- Water Harvesting
- Waste Management
- Paperless Office
- Evidence of Success



## Best Practice - 1: Environment and Social Consciousness

## 1. Alternate Sources of Energy:



Roof-mounted solar panel


## Roof-mounted solar water heater

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Solar energy based electric vehicle charging Unit


Geo-thermal based temperature control system

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## Bio-gas plant

## 2. Lowering Carbon Emission.



CNG bus

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## Use of LED lights



## Star rated equipment

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Promotion of bicycle and electric vehicle

## 3. Biodiversity on Campus.



Biodiversity on campus

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Biodiversity on Campus

| S. No. | Name of Plants | S. No. | Name of Plants |
| :---: | :--- | :---: | :--- |
| 1 | Phycus | 26 | Lemon |
| 2 | Phycus Panda | 27 | Pomegranate |
| 3 | Champa | 28 | Badheliya |
| 4 | Desi Chaina Palm | 29 | Panda (Small) |
| 5 | Green Tapori | 30 | Money Plant |
| 6 | Golden Tapori | 31 | Kadam |
| 7 | Cycus Palm | 32 | Ringal |
| 8 | Bottel Palm | 33 | Alstonia |
| 9 | Phistallili | 34 | Red Hedge |
| 10 | Rashbhari | 35 | Mister India |
| 11 | Gaganberia | 36 | Fortuna |
| 12 | Gudhal | 37 | Vishmarakya |
| 13 | Kaner | 38 | Papadi |
| 14 | Erica Palm | 39 | Gulmohar |
| 15 | Pharcaria. | 40 | Eshparks |
| 16 | Anerami Hedge | 41 | PetricRouteen |
| 17 | Tarilia Palm | 42 | Golden Darshna |
| 18 | Green Bail | 43 | Chonoprakash |
| 19 | Egglisha | 44 | Red Lili |
| 20 | Marigold | 45 | Exports Gilhari |

## 4. Water Harvesting



Rain water harvesting wells

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## 5. Water Conservation measures.



## Push tap equipment



Save water sticker

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## 6. Waste Management



MoU between Institute and Ginger Root Hospitality for Solid Waste

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MoU between Institute and Coscove Pvt. Ltd. For E-waste


Chemical waste disposal guide

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Chemical disposal equipment


Separate Bins for Dry and Wet Waste

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## E-Waste collection bin



Waste management plan

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Paper/Plastic waste management plan

## Paperless Office



Institute ERP SIM login page (https://glbg.servergi.com:8072/SIMWEBGLB/Login)

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Use of Emails in circulating official circulars (https://mail.google.com/mail/u/0/?ogbl\#inbox)


Institute website home page (https://www.glbitm.org/)

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Institute official Facebook home page (https://www.facebook.com/glbitm)


Institute official YouTube channel (https://www.youtube.com/user/glbitm07)

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## Environmental Promotional Activities

| S. No | Date | Name of Activity | Web-link |
| :---: | :---: | :---: | :---: |
| 1 | 23/11/2022 | Awareness programme against use of plastic | https://www.glbitm.org/events/awareness-programme-against-use-of-plastic/1117 |
| 2 | 01/11/2022 | $7{ }^{\text {th }}$ India Water Week 2022 | https://www.glbitm.org/events/7th-india-water-week-2022/1109 |
| 3 | 03/09/2022 | Tree Plantation Drive 2022 | https://www.glbitm.org/events/tree-plantation-drive-2022/1101 |
| 4 | 28/09/2022 | Electric Vehicle Club of GLBITM organized an expert talk | https://www.glbitm.org/events/electric-vehicle-club-of-glbitm-organized-an-experttalk/1097 |
| 5 | 16/09/2022 | Seminar on Integration of Solar in E \& H vehicles - The biggest innovation in mobility | https://www.glbitm.org/events/seminar-on-integration-of-solar-in-e--h-vehicles--the-biggest-innovation-in-mobility/1086 |
| 6 | 07/09/2022 | Expert lecture on Basics of Electric Vehicles | https://www.glbitm.org/events/expert-lecture-on-basics-of-electric-vehicles/1082 |
| 7 | 05/08/2022 | World Environment Day | https://www.glbitm.org/events/world-environment-day-conducted-by-cse-department-and-iic/1070 |
| 8 | 22/04/2022 | Earth Day Celebration 2022 | https://www.glbitm.org/events/earth-day-celebration-2022/1002 |
| 9 | 08/01/2021 | 5-Days AICTE ATAL sponsored FDP on Energy Engineering | https://www.glbitm.org/events/faculty-development-program-fdp-on-energyengineering/870 |
| 10 | 21/06/2021 | Expert lecture on Waste Energy Recovery Options from Electric and Hybrid Vehicle Battery | https://www.glbitm.org/events/expert-lecture-on-waste-energy-recovery-options-from-electric-and-hybrid-vehiclebattery/891 |
| 11 | 05/06/2021 | Online Session on Waste Recycling | https://www.glbitm.org/events/online-session-on-waste-recycling/896 |
| 12 | 01/02/2020 | GL BAJAJ Cycle Ride | https://www.glbitm.org/events/gl-bajaj-cycling-club-ride/1181 |
| 13 | 29/01/2019 | Faculty Development Program on Modern Thermal Power Generation Technologies | https://www.glbitm.org/news details.aspx ?mpgid=76\&pgidtrail=77\&newsid=956 |
| 14 | 18/10/2019 | 2nd International Conference on Power Energy Environment and Intelligent Control | https://www.glbitm.org/events/international-conference-on-power-energy-environment--intelligent-control/686 |
| 15 | 13/04/2018 | Expert talk on Computational Intelligence models for Solar Energy Applications | https://www.glbitm.org/events/iece-international-conference-on-power-energy-environment-and-intelligent-control/420 |

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| 16 | $13 / 04 / 2018$ | Expert talk on Can solar, batteries <br> and EVs disrupt energy industry? |  |
| :---: | :--- | :--- | :--- |
| 17 | $13 / 04 / 2018$ | Expert talk on Sustainable <br> Harvesting of a Renewable <br> Resource |  |
| 18 | $13 / 04 / 2018$ | Invited Talk on "Power system <br> industry, issues and reforms" |  |
| $18 / 9$ | $13 / 04 / 2018$ | Invited Talk on "Evaluation of <br> Relative Impact of Aerosols on <br> Photovoltaic Cells through <br> Combined Shannon's Entropy and <br> Data Envelopment Analysis <br> (DEA)" |  |
| 21 | $17 / 08 / 2018$ |  |  |

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## Evidence of Success



Live monitoring of carbon footprint reduction through Solar Panel (https://esenz.co.in/esenzCustomerLoginV3.aspx)

Intellectual Property Rights (IPR) on Water Conservation

| S. No. | Application No. | Title of Patent | Date of <br> Publication | Department | Status |
| :---: | :---: | :--- | :---: | :---: | :---: |
| 1 | 202111054179 | IoT based water distribution <br> system | $3 / 12 / 2021$ | CSE | Published |
| 2 | 2021110332910 | Rain sensing umbrella: rain <br> sensing hands free auto open <br> closed umbrella bag | $20 / 08 / 2021$ | ME | Published |

Intellectual Property Rights (IPR) on Energy Harvesting

| S. N. | Application No. | Title of Patent | Date of <br> Publication | Department | Status |
| :---: | :---: | :--- | :---: | :---: | :---: |
| 1 | 202111005346 | System and method for <br> continuous charging using <br> piezoelectric material | $2 / 12 / 2021$ | ECE | Published |
| 2 | 202011027400 | Rectenna based energy <br> harvesting system | $31 / 12 / 2021$ | ECE | Published |
| 4 | 202111004183 | Systems and methods for <br> generation of electrical power <br> from a sludge | $12 / 11 / 2021$ | ECE | Published |
| 5 | 202011033287 | System and method for floating <br> solar operated purifier | $11 / 02 / 2022$ | ME | Published |

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Intellectual Property Rights (IPR) on Waste Management

| S. No. | Application No. | Title of Patent | Date of <br> Publication | Department | Status |
| :---: | :---: | :--- | :---: | :---: | :---: |
| 1 | 202011027427 | Outdoor air filter without using solid <br> filter | $5 / 11 / 2021$ | Applied <br> Science | Published |
| 2 | 202011053273 | A charged device for cleaning dust | $12 / 11 / 2020$ | Applied <br> Science | Published |
| 3 | 202011027401 | IoT enabled smart waste management <br> system | $31 / 12 / 2021$ | IT | Published |
| 4 | 202011033226 | System and method for sensor based <br> waste management | $5 / 11 / 2021$ | IT | Published |
| 5 | 202111054177 | Method and system to manage a dry <br> waste material and wet waste material | $3 / 12 / 2021$ | IT | Published |
| 6 | 202111054303 | Smart waste management system | $3 / 12 / 2021$ | IT | Published |
| 7 | 201811045183 | System and method for e-waste <br> management | $28 / 12 / 2018$ | ECE | Published |
| 8 | 201811045491 | System for detecting pollution in <br> water | $28 / 12 / 2018$ | ECE | Published |
| 9 | 201811041212 | Apparatus and method for <br> transferring hazardous fluid | $23 / 11 / 2018$ | ME | Published |
| 10 | 201811041725 | Method for treatment of spent liquid <br> using fly ash | $30 / 11 / 2018$ | ME | Published |
| 11 | 201811041727 | Device for preserving fluid leaked <br> from a duct | $30 / 11 / 2018$ | ME | Published |
| 12 | 201811041728 | Method for converting biomass to <br> liquids | $30 / 11 / 2018$ | ME | Published |
| 13 | 202011027394 | Development of glass fiber epoxy/ <br> saw dust composite and evaluation of <br> their mechanical properties | $3112 / 2021$ | ME | Published |
| 14 | 202111008148 | Systems and methods for recycling of <br> plastic waste to manufacture an <br> object | $12 / 11 / 2021$ | ME | Published |
| 15 | 201811041213 | Eco- friendly incineration of waste <br> material | $23 / 11 / 2018$ | CE | Published |

Student Project on Solar Energy

| Group No. | Student Name | Roll No. | Topic | Guide | Intended | Category |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ME/Projects <br> $/ 2019 / 59$ | Abhay Kumar <br> Sahani | 1519240003 | To study and <br> fabricate solar- <br> wind hybrid <br> energy model | Mr.Ashutosh <br> Gupta | Environment | Analysis |

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Students Projects on Waste Management

| Group No. | Student Name | Roll No. | Topic | Guide | Intended | Category |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ME/Projects/2019/3 | Abhinav kr Srivastava | 1519240006 | Separation of Garbage by using gravity/spring loaded Technique | Dr.V.R.Mishra | Environment | Design, Fabrication |
|  | Abhishek kr Singh | 1519240011 |  |  |  |  |
|  | Aman Singh | 1519240030 |  |  |  |  |
|  | Ammar Alam | 1519240033 |  |  |  |  |
|  | Gaurav Kumar | 1519240078 |  |  |  |  |
|  | Shrestha Gupta | 1519240220 |  |  |  |  |
|  | Vikrant Singh | 1519240258 |  |  |  |  |
| ME/Projects/2019/4 | Akshay Srivastava | 1519240027 | Production of fuel from plastic waste using molecular deterioration process | MrAnuj Gupta MrAmardeep | Environment | Fabrication \& Analysis |
|  | Devendra Kumar | 1519240071 |  |  |  |  |
|  | Manish Tomar | 1519240110 |  |  |  |  |
|  | Pankaj Kumar Bhati | 1519240140 |  |  |  |  |
|  | Vikrant Singh Holkar | 1519240259 |  |  |  |  |
| ME/Projects/2019/5 | Ashish Saraswat | 1519240050 | Suction of garbage through vacuum pump and compressed through extruder | Dr.V.R. Mishra | Environment | Design, Fabrication |
|  | Hari Om Tripathi | 1519240083 |  |  |  |  |
|  | Himanshu Kr Verma | 1519240087 |  |  |  |  |
|  | Iqbal | 1519240124 |  |  |  |  |
|  | Prashant Yadav | 1519240153 |  |  |  |  |
| ME/Projects/2019/6 | Aditya Pratap Singh | 1519240016 | Smart Dustbin for Indian Railways | Dr. V. R Mishra | Society | Design, Fabrication |
|  | Amit Chaudhary | 1519240031 |  |  |  |  |
|  | Deepak Singh | 1519240069 |  |  |  |  |
|  | Quazi Furquan Ahmed | 1519240164 |  |  |  |  |
|  | Suraj Devnath | 1519240245 |  |  |  |  |
| ME/Projects/2019/18 | Sudhanshu Chauhan | 1419240269 | Design and Manufacturing of Automatics drainage cleaning system | Mr. Prabhat Ranjan | Society | Design, Fabrication |
|  | Shubham Chaudhary | 1519240223 |  |  |  |  |
|  | Sumit Singh | 1519240243 |  |  |  |  |
|  | Vishal Chaudhary | 1519240263 |  |  |  |  |
|  | Shivam Kumar | 1519240212 |  |  |  |  |
|  | Utkarsh Ananad | 1419240279 |  |  |  |  |
|  | Vivek Kumar | 1519240269 |  |  |  |  |
| ME/Projects/2019/24 | Nikhil Kumar | 1519240134 | Extraction of collagen from leather waste to reduce environmental pollution by the development of green metal matrix composition | Dr.S.P Dwivedi | Environment | Fabrication \&Research |
|  | Yogesh Singh | 1519240276 |  |  |  |  |
|  | Manish Mehra | 1519240109 |  |  |  |  |
|  | Nitin Thukral | 1519240138 |  |  |  |  |
| ME/Projects/2019/25 | Arpit Singh | 1519240045 | Development of waste steel chips reinforced copper based composite and its | Dr.S. <br> P.Dwivedi | Environment | Fabrication \&Research |
|  | Jai Prakash Yadav | 1519240095 |  |  |  |  |
|  | Md. Shahnawaz | 1519240117 |  |  |  |  |
|  | Pradeep Yadav | 1519240147 |  |  |  |  |

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|  |  |  | characterization |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ME/Projects/2019/26 | Himanshu Gupta | 1519240086 | Development of Reverse supply chain management of food Waste | Mr. Anuj Gupta | Society | Survey |
|  | Mohammad Arman | 1519240123 |  |  |  |  |
|  | Pranjal Srivastava | 1519240148 |  |  |  |  |
|  | Waseem Ahmad | 1519240271 |  |  |  |  |
| ME/Projects/2019/28 | Faizan Hasan | 1519240077 | Investigation of Agro Waste Material for Building Purposes | Mr.Anuj Gupta | Society | Analysis, Research |
|  | Sharang Raj | 1519240209 |  |  |  |  |
|  | Shubham Kumar | 1519240226 |  |  |  |  |
|  | Kush kumar | 1519240103 |  |  |  |  |
| ME/Projects/2019/29 | Akshat Sharma | 1519240026 | Investigation of thermal properties of agro waste material | Mr. Anuj Gupta | Society | Analysis, Research |
|  | Amit Sharma | 1519240032 |  |  |  |  |
|  | Ankit Jain | 1519240035 |  |  |  |  |
|  | Deepak Bhati | 1519240067 |  |  |  |  |
|  | Deepak Kumar | 1519240068 |  |  |  |  |
| ME/Projects/2019/40 | Abuzaid Khan | 1519240013 | Fabrication and testing of plastic sand bricks | Dr SS <br> Chauhan | Environment | Environment |
|  | Bhushan Kumar | 1519240064 |  |  |  |  |
|  | Hritik Goyal | 1519240092 |  |  |  |  |
|  | Prem Shankar Singh | 1519240158 |  |  |  |  |
|  | Shivank Goyal | 1519240216 |  |  |  |  |
|  | Mayank Raj | 1519240111 |  |  |  |  |
| ME/Projects/2019/58 | Abhishek Agnihotri | 1419240007 | Hand driven paper shredder | $\begin{gathered} \text { Mr. Mukesh } \\ \text { Kumar } \\ \hline \end{gathered}$ | Environment | Design, Fabrication |
|  | Kuldeep Singh Yadav | 1519240100 |  |  |  |  |



Use of plastic west as plastic road in campus

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Tree plantation drive


Mini-Marathon for "Green \& Clean Greater Noida" inauguration ceremony

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Mini-Marathon for "Green \& Clean Greater Noida"


Prize Distribution to winners of Mini-Marathon for "Green \& Clean Greater Noida"

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Tree plantation drive


Swachh Gazipur Mobile App launching Ceremony

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## ऐंनिमा ड्राइव से कर रहे गोवंश की रक्षा


सडुक पर बेसहारा चूमते गेगेश को देख्कर लोगो का मन करोटता है। काषंक की ठंड व यरिए मी गेर्षेश के लिए परेखानी बनती है। उनकी रेतानी को देखते हर जीएल क्या्या इैजीनियरिग बसलेज के हात्र ने क्तम सएया है तारों ने टिम बनाकर गोरेश गेक्षेश के लिए खास औी पर टैयार किए प् सुख्या कवर पहनाने का काम कर खडे हैं बे सुखा क्वर एक और जतों उन्हों ठंड वं बरिश वे बचाएगा, वही दुसरी तरक कवर पर लगे रिफ्लिक्टर की वज्ण से ये चाहन चलकों को दूर से ही नजर अ जाएंगे, जिससे दुर्णंना का खता कम हो जाएग। अक्सर सहाक दुर्याटना की यनह से बैगुयानों की मौत हो जाती है। कवर को तैवार करने में आवे वाले खर्ण को कौलेज एंधन चm वानन किता जहता है।



## सराहनीय

 पहना रहेविशेष सुरहा कवर

- Bत्रों द्वारा चतार्या जा रहत्त है ऐनिमा उ्राख अनियान
- उट व प्तास्टक से वैगार किता

भी लगाया गया है। उू से ठंड में उन्ह रालत मिलती है तो स्लारिक से औस व खारिश में भीगते से गेवेत बच जाते है। कवर को गैवैत की पैठ पर बहि टिया जाता है। बाँचने के लिए कवर पर बैल्ट लगईं गई है। एवम का कराना है एक क्रार को tैaार कनने में करीब तीन यी स्पाने

Media coverage on "Anima Drive" initiative to protect stray cattle and other animals

## बीमार गायों को इलाज, लावारिस को घर दिला रहा ई-गोशाला ऐप

जीएल बजाज के छात्र के ऐप के जरिए लोगों ने गोशालाओं को दान दिए 12 लाख रुपये


Media coverage on e-Goshala App

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Dainik Jagran news on student project "Geo-thermal based temperature control system"


Dainik Jagran news on pedal operated wash basin

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Dainik Jagran news on student project "LPG operated fridge"


Power energy environment and intelligent control award-2018

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An award granted by Uttar Pradesh Government for cleanest campus-2017

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