



13 CLIMATE ACTION



13.1 University Measures Towards Research on Climate Action

Sharda University is committed in tackling climate change through research, policy and partnership. Climate change is the most devastating and catastrophic threat to our planet, and urgent action is required to mitigate its impact. The future of our planet depends upon the way we act and manage the climate change with education and research at the centre. Sustainable Development Goal 13 focuses on taking urgent action to combat climate change and its impacts. SDG 13 affects the entire global population and environment and is strongly dependent on scholarly research. The goal emphasizes the need for global cooperation to address the adverse effects of climate change and to build resilience against its impacts. Sharda University has made great strides toward environmental sustainability through demonstrating dedication in teaching and research and waste management procedures, energy conservation efforts, and environmental education.

13.1.1 Climate Action: Cite Score

Response: University research publications are in top rated journals

As sustainability becomes an increasing priority throughout global society, Sharda University are assessed on their contribution to relevant research publications. The University produces comparable quantities of publications.

13.1.2 Climate Action: FWCI

Article Field Weighted Citation Impact (FWCI) indicates how the number of citations received by an article compares to the average or expected number of citations received by other similar publications. Similar publications are determined by year, type, and discipline.

13.1.3: Climate Action: Publications

Response: Sharda University is committed to promoting sustainable practices and addressing global challenges through education, research, and collaboration.

This statement aims to highlight our partnerships, collaborative efforts, and contributions towards the achievement of Sustainable Development Goals (SDGs) through our publications in area of climate change and action.

School	Department	Title of paper	Month of Publication	Name of journal	Year of publication	ISSN number
Sharda School of Basic Sciences & Research	Environmental Sciences	Improving exergo-enviro-economic parameters and annual productivity of double slope solar desalting unit by incorporating concentrator integrated evacuated tubular collectors	September	Desalination and Water Treatment	2023	1944-3994
Sharda School of Law	Law	Predicted Impacts of Climate and Land Use Changes on Plant Diversity	February	African Journal of Biological Science	2024	2663-2187

Sharda School of Pharmacy	Pharmacy	Insights into photocatalytic CO ₂ reduction reaction pathway: Catalytic modification for enhanced solar fuel production	March	Journal of Industrial and Engineering Chemistry	2024	1226-086X
Sharda School of Pharmacy	Pharmacy	Photocatalytic CO ₂ reduction using metal and nonmetal doped TiO ₂ and its mechanism	March	Reaction Kinetics, Mechanisms and Catalysis	2024	1878-5204
Sharda School of Business Studies	Management	A Bibliometric Review Of Green Finance: Current Status, Development And Future Directions	December	Folia Oeconomica Stetinensia	2023	1730-4237
Sharda School of Basic Sciences & Research	Life Sciences	Wired for Energy: Electromethanogenesis Redefining Anaerobic Digestion	March	Process Safety and Environmental Protection	2024	0957-5820
Sharda School of Engineering & Technology	Civil Engineering	Sustainable construction: unveiling the potential of hempcrete in the modern era	April	Asian Journal of Civil Engineering	2024	1563-0854
Sharda School of Basic Sciences & Research	Environmental Sciences	Inroads into saline-alkaline stress response in plants: unravelling morphological, physiological, biochemical, and molecular mechanisms	April	Planta	2024	1432-2048
Sharda School of Basic Sciences & Research	Life Sciences	Microbial enzyme production: Unlocking the potential of agricultural and food waste through solid-state fermentation	June	Bioresource Technology Reports	2024	2589-014X
Sharda School of Basic Sciences & Research	Life Sciences	Biological machinery for the production of biosurfactant and their potential applications	May	Microbiological Research	2024	0944-5013
Sharda School of Basic Sciences & Research	Chemistry & Biochemistry	Investigation on water defluoridation via batch and continuous mode using Ce–Al bimetallic oxide: Adsorption dynamics, electrochemical and LCA analysis	April	Environmental Pollution	2023	0269-7491
Sharda School of Business Studies	Management	Correction to: Inequality consequences of natural resources, environmental vulnerability, and monetary-fiscal stability: a global evidence	January	Environmental Science and Pollution Research	2023	0944-1344
Sharda School of Basic Sciences & Research	Chemistry & Biochemistry	Effect of nano SiO ₂ on the properties of composite cements	May	Materials Today: Proceedings	2023	2214-7853
Sharda School of Basic Sciences & Research	Life Sciences	Biogas upgrading by hydrogenotrophic methanogens: an overview	August	Waste and Biomass Valorization	2022	1877-2641
Sharda School of Media, Film & Entertainment	Mass Communication	Environmental Information Policy in India feed Pro-Environment Industry Operation: A Case Study of EIA Report on Proposed	February	Macromolecular Symposia	2023	1022-1360

		Integrated Steel Complex Site, Halakundi, Karnataka				
Sharda School of Basic Sciences & Research	Mathematics	Carbon Tax and Inflationary Conditions under Learning Effects: A Green EOQ Inventory Model	February	Macromolecular Symposia	2023	1521-3900
Sharda School of Basic Sciences & Research	Mathematics	A green realistic inventory model with preservation technology for deteriorating items under carbon emission	March	Materials Today: Proceedings	2023	2214-7853
Sharda School of Engineering & Technology	Biotechnology	Role of Polyamines in Molecular Regulation and Cross-Talks Against Drought Tolerance in Plants	September	Journal of Plant Growth Regulation	2022	0721-7595
Sharda School of Basic Sciences & Research	Life Sciences	Recent advances and challenges in the utilization of nanomaterials in transesterification for biodiesel production	April	Heliyon	2023	2405-8440
Sharda School of Design, Architecture & Planning	Architecture	Partial replacement of cement and fine aggregate in mortar material by using carbon sequestration technique	April	Materials Today: Proceedings	2023	2214-7853
Sharda School of Basic Sciences & Research	Chemistry & Biochemistry	Hydration of Portland slag cement in the presence of nano silica	June	Materials Today: Proceedings	2023	2214-7853
Sharda School of Basic Sciences & Research	Life Sciences	A critical review on nanotechnological advancement in biogas production from organic waste	June	Biomass Conversion and Biorefinery	2023	2190-6815
School of Basic Sciences & Research	Life Sciences	Recent Developments in Lignocellulosic Biofuels, a Renewable Source of Bioenergy	April	Fermentation	2022	2311-5637

13.2 Low-carbon Energy Use

Response: Newly constructed building is energy efficient and energy audit is conducted by third party to check the efficiency.

Sharda University is strongly committed to the goal of environmental sustainability and playing an impactful role to ensure compliance in terms of SDGs. The quality and scale of Sharda university efforts to transform it into a sustainable campus have been duly recognized by Indian Green Building Council (IGBC) created the GRIHA (Green assessment for Integrated Habitat Assessment). The University is meaningfully contributing to Climate Action, through the important measures and frameworks wherein Sharda University newly constructed building is energy - efficient and sustainable buildings, which can significantly reduce energy consumption to promote clean energy. The Indian Green Building Council (IGBC) created the GRIHA (Green assessment for Integrated Habitat Assessment) assessment system evaluates all Indian buildings' environmental performance where Sharda University newly constructed building is certified by GRIHA in the case of a university building means that the structure uses sustainable features and

adheres to environmentally conscious practices. GRIHA places emphasis on a number of important elements. In order to minimize energy usage, the building should include energy-efficient technology like insulation, solar panels, and energy-efficient lighting systems. To reduce water usage and handle water resources efficiently, the building should have wastewater treatment facilities, rainwater harvesting systems, and water-efficient fixtures installed. The planning and selection of the building's site should give special

consideration to the building's accessibility to public transit, waste management systems, and green spaces, all of which will lower pollution and provide a healthier atmosphere. The choice of materials for the building should take into account the building's life cycle impact, as well as the usage of low-carbon and sustainable resources and minimal waste production. To give residents a healthy and cozy environment, the building should guarantee excellent thermal comfort, natural lighting, and indoor air quality. GRIHA-certified university buildings using these ideas to provide healthier environments for workers and students, lessen their negative effects on the environment, and promote sustainable development.



Fig.1. GRIHA Certified Building

The university buildings are IGBC1 and LEED2 certified, and steps have been taken to increase energy efficiency by adding solar panels, energy-efficient lighting in new construction, lean occupancy sensors in restrooms, reviewing, analysing, and renovating laboratories for operational safety and environmental preservation, computing carbon footprints, and launching initiatives to

achieve carbon emission neutrality. To update our Energy consumption analysis and conservation strategy, we constantly evaluate how we consume energy and look for areas where we can improve. Through energy-efficient practises in campus operations, this aids in the optimisation and wise use of energy. We're dedicated to moving towards clean and green energy initiatives. With the assistance of university management, strategic activities have been launched for transition to "clean power" and lessen reliance on "fossil fuels" in order to accomplish energy efficient building. Selected hostels now have solar water heaters and a 430kwp solar power plant has been erected to switch from entirely relying on captive power to solar power.



Fig 2: ISO50001:2018 Certification for Energy Conservation

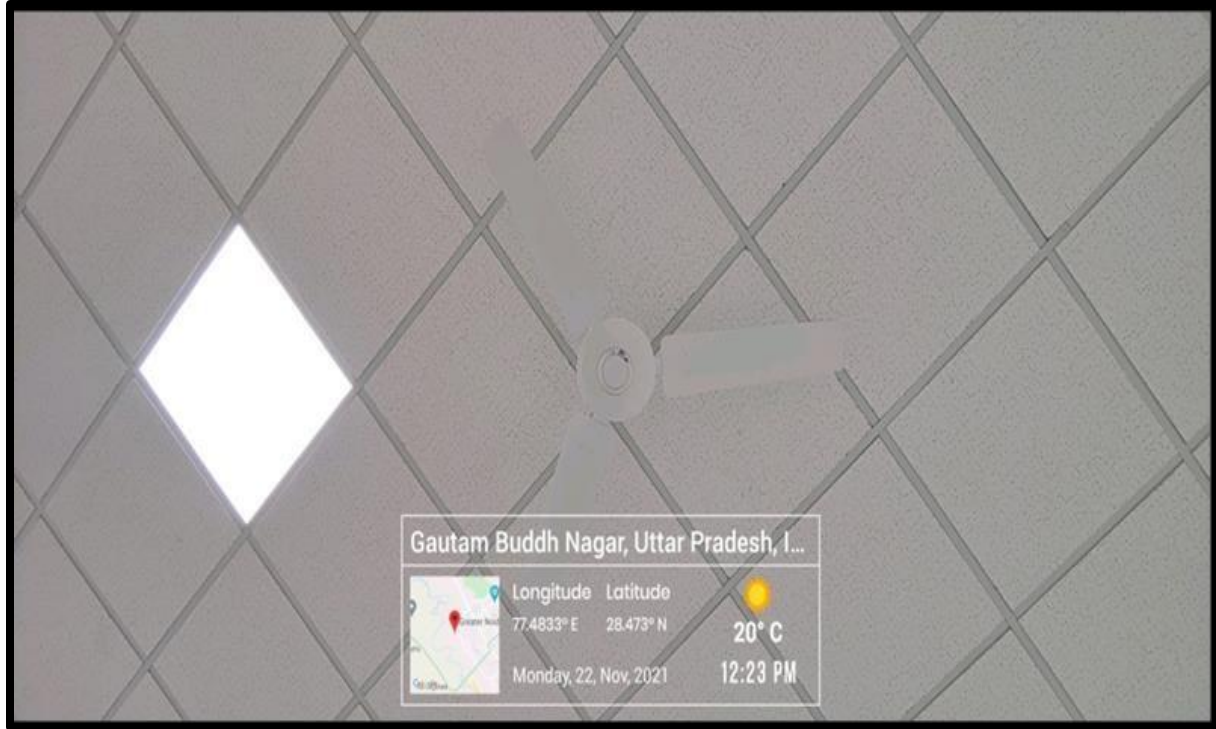


Fig.3. BLDC Fans in Building



Fig.4. LED Lights in Building



Fig. 5 & 6: Solar Lights in Buildings



Fig. 7: Sensor Lights in Washroom



Fig. 8: Heat Protected Films are used on Windows for Energy Conservation

Biogas Plant and Eco-Friendly vehicles for carbon management

To encourage carbon reduction and less carbon dioxide emission, Sharda University has started green campus projects. These programmes include energy conservation, waste management, energy-efficient building construction, and the promotion of environmentally friendly transportation choices. Indian universities conduct campaigns and outreach initiatives to inform students and the community at large about the significance of clean energy. The aforementioned programmes seek to raise awareness, facilitate behavioural modifications, and stimulate the integration of clean energy practices throughout society. Sharda University also take initiative to develop new innovation to detect and prevention of Carbon emission not only in campus also in different areas of Greater Noida. A biogas power plant is installed to facilitate undergraduate and post graduate students in the study and usage of renewable energy. The 15 cubic meter biogas plant is set up behind Mandela Hostel. Food waste of 100- 300 kgs approx per day drawn from Mess canteens and added with cow dung water mixture is used as raw material. The raw material content takes 3-4 days for biogas formation which is used to regenerate approx. 4KVA electric energy. Thus, food waste is converted into a resource and creating value in the form of electric power generation. The plant is utilizing the recent technology to generate the efficient energy.



Fig. 9: 5KV Biogas plant of the University

13.3 Environmental Education Measures

Sharda University is very much impactful to integrate the climate action perspective into its academic programs, research, and extension activities. University has an Environmental Science department that design, formulate and implement academic programs, course work, and campus-based projects in the area of Environment and sustainability. A core course of ‘Environmental Studies’ for all UG programs provides a basic understanding of environment and sustainability including the ‘climate change and SDGs component’ in their very first year, while minor degree programs like environmental management, Climate Science, Renewable Energy provide scope for more specialization.

13.3.1: Local Education Programmes in Climate

Response: Climate change related courses being taught in different schools of Sharda University and environmental events organised for educating the public

Sharda University has the policy to have fully dedicated or part of the curriculum focusing on the climate change and its impact on the survival of the human being. The University has a policy to focus on the research conducted by the faculty members and the students to address the climate change and its impact. At Sharda University, we undertake introducing students to the conceptual and theoretical aspects related to climatic change and related aspects, through various courses being taught in different schools of Sharda University.

Programme Code	Programme Name	Course Code	Name of the Course	Course Description (As Per The Course Module)
SOE0103	B.A. B.Ed.	BIA205	Climatology	This course gives a general introduction to meteorology and climatology. Meteorology topics include Atmospheric composition and structures, Heat balance, moisture and cloud development in the atmosphere, atmospheric dynamics, small- and large-scale circulations, storms and cyclones, and weather forecasting. Climatology topics include the interaction between the atmosphere and oceans over long time periods, climate classification, and the potential for climatic change.
SOE0103	B.A. B.Ed.	EVS113	ENVIRONMENTAL SCIENCE	This course talks about the nature and scope of environmental science, about different natural resources, like water, air, minerals, food, energy and land. It also focuses upon the measures to preserve and conserve those resources.
SAS0104	Master of Science Agriculture (Agronomy)	MAG503	Agro-meteorology and crop ecology	This course is designed to impart practical knowledge crop ecology and its modification, measurement of weather parameters about agro-meteorology and crop weather forecasting to meet the challenges of aberrant weather conditions.
SAS0104	Master of Science	MAG701	Dryland farming and watershed management	To teach the basic concepts and practices of dry land farming and soil moisture conservation.

	Agriculture (Agronomy)			
SAS0104	Master of Science Agriculture (Agronomy)	MAG604	Modern concepts in agronomy	This course is designed to acquaint the students about the recent developments in agronomy and resource management
SAS0104	Master of Science Agriculture (Agronomy)	MAG601	Principles and Practices of Weed Management	To familiarize the students about the weeds, herbicides and methods of weed control.
SAS0104	Master of Science Agriculture (Agronomy)	MAG502	Soil fertility and nutrient management	To impart knowledge of fertilizers and manures as sources of plant nutrients and apprise about the integrated approach of plant nutrition and sustainability of soil fertility.
SBR0501	Bachelor of Science (Hons.) Agriculture	AGL109	Agricultural Heritage	To acquaint the present day agriculture students about our ancient and traditional agricultural systems and practices. This will enable us to build the future research strategy also.
SBR0501	Bachelor of Science (Hons.) Agriculture	AGP301	Crop production technology-I (Kharif crops) Lab	This course is designed to make students familiar with the kharif crops sowing season and their production technologies.
SBR0501	Bachelor of Science (Hons.) Agriculture	BAG341	Diseases of Field and Horticultural crops and their Management-I	This course is designed to give knowledge about the diseases which are normally occurs in the field which damages the crop and reduces the yield of the crop and Diseases cycle and their management.
SBR0501	Bachelor of Science (Hons.) Agriculture	AGL306	Farm Machinery and Power	This course is designed to provide basic knowledge about agricultural equipment and their application in agriculture.
SBR0501	Bachelor of Science (Hons.) Agriculture	AGL204	Fundamental of Agriculture Economics	The course agricultural economics is an applied discipline with a broadly based application to development theory. The students will be able to relate and design the economy based on agriculture
SBR0501	Bachelor of Science (Hons.) Agriculture	AGL208	Fundamentals of Agricultural Extension Education	This course will help the students in understanding the planning and implementation of plans at village level for increasing agricultural production
SBR0501	Bachelor of Science (Hons.) Agriculture	AGL105	Fundamentals of Rural Sociology, Educational Psychology	This course is important for the students in order to understand the rural life and rural set up as agriculture is the basis of life there.
SBR0501	Bachelor of Science (Hons.) Agriculture	AGL110	Introduction to Life Sciences	To understand the basic concept of nomenclature, classification, seed germination, and importance of animals in agriculture.
SBR0501	Bachelor of Science (Hons.) Agriculture	AGL310	Introductory Soil & Water Conservation Engineering	The student will get aware of the Soil and water which are two important natural resources and the basic needs for agricultural production.

SBR0501	Bachelor of Science (Hons.) Agriculture	BAG350	Management of Beneficial Insect	This course is designed to give knowledge about the different types of insects which help in different types of agriculture practices.
SBR0501	Bachelor of Science (Hons.) Agriculture	AGL307	Principles of Integrated Pest and Disease Management	This course is designed to make students proficient in IPM. They also learn about certain properties of IPM, its principles and its ecological management etc.
SBR0501	Bachelor of Science (Hons.) Agriculture	AGL205	Principles of Organic Farming	This course is designed to give knowledge about the organic farming which should be done by the farmers which are so beneficial for the environment.
SBR0501	Bachelor of Science (Hons.) Agriculture	AGL403	Principles of Seed Technology	This course is designed to give knowledge on seed and seed testing for quality assessment
SBR0501	Bachelor of Science (Hons.) Agriculture	AGL207	Production Technology for Vegetables and Spices	This course is designed to learn about the production technologies of vegetables and spices for increase the quality as well as productivity of crops.
SBR0501	Bachelor of Science (Hons.) Agriculture	BAP401	Student READY Programme (Plant Clinic)	This course is designed to make students the best means to produce well trained agricultural graduates with broad based knowledge and techniques to meet the emerging challenges.
SBR0701	Master of Science (Water Resources and Environmental Management/ Environmental Science)	MES101	Climatology and Oceanography	To develop thorough understanding of various meteorological and oceanographical components and how these components interact with each other for the formation of weather. Further with the passage of time how these factors contributes to the formation of climate.
SBR0701	Master of Science (Water Resources and Environmental Management/ Environmental Science)	MES109	Global Climate System and Sustainable Development	To develop in-depth understanding of climate and its related components. Factors that affecting the climate and leads to climate change, Various policies, regulations and efforts taken at global level in tackling the problem of climate change. Further the course also throws light on the interrelationship between sustainable development and climate change mitigation
SAP0102	Bachelor of Architecture	ART315	Environment, Sustainability & Services - IV	Building services engineering, technical building services, architectural engineering, building engineering or facilities and services planning engineering refers to the implementation of engineering for the internal environment and environmental impact of a building.
SAP0102	Bachelor of Architecture	ART309	Environment, Sustainability & Services-III	Building services are the systems installed in buildings to make them comfortable, functional, efficient, and safe. Building services include Building control systems. Energy distribution. Energy supply (gas, electricity, and renewable

				sources such as solar, wind, geothermal and biomass). This course is designed to give architects an overview and introduction to HVAC and Vertical Transportation; and architectural considerations and their coordination with other services and architectural designs.
SAP0102	Bachelor of Architecture	ART225	Environment, Sustainability and Services -III	Building services are the systems installed in buildings to make them comfortable, functional, efficient and safe. Building services might include: Building control systems. Energy distribution. Energy supply (gas, electricity and renewable sources such as solar, wind, geothermal and biomass). This course is designed to give architects an overview and introduction to Plumbing systems; and architectural considerations and their coordination with other services and architectural designs.
SAP0102	Bachelor of Architecture	ART154	Environment, Sustainability and Services-I	The course includes topics such as beliefs, meanings, values and attitudes of individuals or groups concerning various environments such as neighbourhoods, cities, transport routes and devices, or recreational areas; evaluation and effectiveness of environments designed to accomplish specific objectives; Interrelationships between human environments and behavioural systems; practises aimed at controlling environments and behaviour. • The subject will have assignments in line with the understanding obtained from design studio, building materials & construction and history of architecture.
SAP0102	Bachelor of Architecture	ART202	Environment, Sustainability Services-II	This course aims to introduce the study of climate in the built environment from an architectural point of view and establishes the link between the climate of a place, thermal comfort, and the building design. It also prepares students to design climate responsive buildings.
SAP0102	Bachelor of Architecture	AEJ201	Vernacular : Architecture without Architect	Vernacular buildings comprise 99% of the buildings of the world. They are those buildings which spring from local custom and practice, that are usually not the result of what we today consider to be mainstream architectural practice. It provides powerful insights into fundamental issues of architecture. Its study provides insights into architectural form and typology, the building process, the relationship between buildings and human activity, the connection of buildings to geography, the ways in which material culture expresses social and cultural values.

SET0301	Bachelor of Technology (Civil Engineering)	BTY371	ECOLOGY AND ENVIRONMENT	This course will cover the basics of Ecology and Environmental Sciences to students coming from different background.
SET0502	Master of Technology (Electronics & Communication Engineering)	ECP830	Advanced Signal Processing Lab	A wireless sensor network (WSN) generally consists of compact low power sensors, which collect information and pass the information via wireless networks to achieve a high level of desired monitoring and control in coordinated manners. WSN applications can be found in areas such as environmental monitoring, smart energy systems, battle field surveillance, home automation, medical monitoring, mobile computing, etc. WSN has integrated network engineering, embedded system engineering and sensor technology.
SET0502	Master of Technology (Electronics & Communication Engineering)	ECE838	Low Power VLSI Design	This is a course on the design and applications of low power integrated circuits. This course introduces various strategies and methodologies for designing low power circuit and systems. It describes the many issues facing designers at architectural, logic, circuit and device levels and presents some of the techniques that have been proposed to overcome these difficulties.
SHS0116	Master of Arts (Modern History)	MAH153	History of contemporary world up to 2000CE	As our world grows smaller with each new technological advance, it becomes increasingly important to know and understand that world and our place in it. The main focus of this course is to enlighten the students with world history and global issues throughout the second half of the 20th Century. As students study Themes e significant global events, they will consider the influence of geo-graphic settings, cultural perspectives, economic systems, and vari-ous forms of government. Contemporary world history will help the students to learn the origins and history of several international or-organization, international politics and even the conflicts that occupy the world around us. This course will provide students with a solid grounding in contemporary world history and ideally encourage then to pursue further historical interests.
SHS0129	Bachelor of Arts (Political Science)	BPO252	ENVIRONMENT LAW AND INTERNATIONAL RELATIONS	This course traces the history and emergence of global environmental cooperation and lack thereof. We examine the actors, institutions, debates, historic moments, and crosscutting issues that shape global environmental politics. We deliberate the rise of big NGOs and multinational corporations, and the power they wield in contemporary global policy. Finally, we look

				<p>ahead at the biggest challenges facing global environmental politics in the 21st century. This includes discussions on environmental science and expertise, climate refugees, the rise of populism, and most recently, pandemics. Students should expect to develop an overview of key issues in global environmental politics and think critically about what works and what needs work.</p>
SHS0130	Bachelor of Arts (Geography)	BGP159	CARTOGRAPHY I	<p>Geography is an amalgam of physical as well as social sciences and as such, it is necessary for the students to go through laboratory exercises, particularly construction of different diagrams based on statistical data, introduction of toposheets and identification of landforms by the shapes of contour.</p>
SHS0130	Bachelor of Arts (Geography)	BGP164	CARTOGRAPHY-II	<p>Geography is an amalgam of physical as well as social sciences and as such, it is necessary for the students to go through laboratory exercises, particularly basic morphometric techniques.</p>
SHS0130	Bachelor of Arts (Geography)	BGO257	CLIMATOLOGY	<p>This paper on Climatology is structured into components of aspects of atmosphere to emphasize the constituents of the atmosphere, the dynamic nature of the processes associated with it and their contribution in making the Earth habitable. The course content also leads to the identification of climatic differentiation on the earth, and the consequences of human activities on the atmospheric processes.</p>
SHS0130	Bachelor of Arts (Geography)	BGP158	ELEMENTS OF MAP AND SURVEYING	<p>Geography is an amalgam of physical as well as social sciences and as such, it is necessary for the students to go through laboratory exercises, particularly construction of scale and map projections. To achieve this objective, the concepts of scale, projection and surveying are to be understood at the initial stage.</p>
SHS0130	Bachelor of Arts (Geography)	BGO251	ENVIRONMENT, DISASTER MANAGEMENT AND CLIMATE CHANGE	<p>The course aim is to give basic understanding of concept Environment and Disaster Management. Student will know the basic concept of appraisal of environmental problems and will also know about some efforts of Indian Government for conservation of environment and natural resources. This will help in developing understanding about various impacts of climate change. The student will be able to</p>

				understand the global efforts to improve the environmental problems faced by mankind. The difference among disaster, hazards, Risk and vulnerability can be identified. This course introduces the basic concepts related to disaster Management.
SOL0101	BBA LL.B (H)	OPE204	SUSTAINABLE DEVELOPMENT AND ENVIRONMENTAL MANAGEMENT	The course objectives of Sustainable Development and Environmental Management typically focus on educating students about the principles, challenges, and strategies related to achieving sustainable development while effectively managing environmental resources.

Sr. No	Name of the event	Date of the event
1	One Day Workshop for Research Project Flood disaster resilient hydraulic design for bridges exposed to climate change sponsored by the Coalition for Disaster Resilient Infrastructure (CDRI), New Delhi.	27 th July,2023
2	Lecture on Innovations in Adaptation to Climate Change in Dryland Agriculture Sharda School of Agricultural Sciences	10 th January,2023
3	Department of Anatomy, is organizing an event on World Environment Day with the theme Beat Plastic Pollution	6 th June, 2023
4	Celebration of World Environment Day	3 rd June, 2023
5	World Environment Day celebration (Online E-Poster making competition)	5 th June, 2023

In line with the same, a number of events are conducted on a regular basis which focuses on the issues related to climatic change. Sharda University was awarded by Sustainable Institutions of India Green Ranking for practicing sustainable education.

**SUSTAINABLE INSTITUTIONS OF INDIA
GREEN RANKINGS 2023**

Certificate of Excellence

IN PURSUIT OF EXCELLENCE TOWARDS PRACTICING
SUSTAINABLE EDUCATION, THIS CERTIFICATE IS AWARDED TO

SHARDA UNIVERSITY

Institutional Grade : **A+**

Institutional Band / Category : **Diamond**



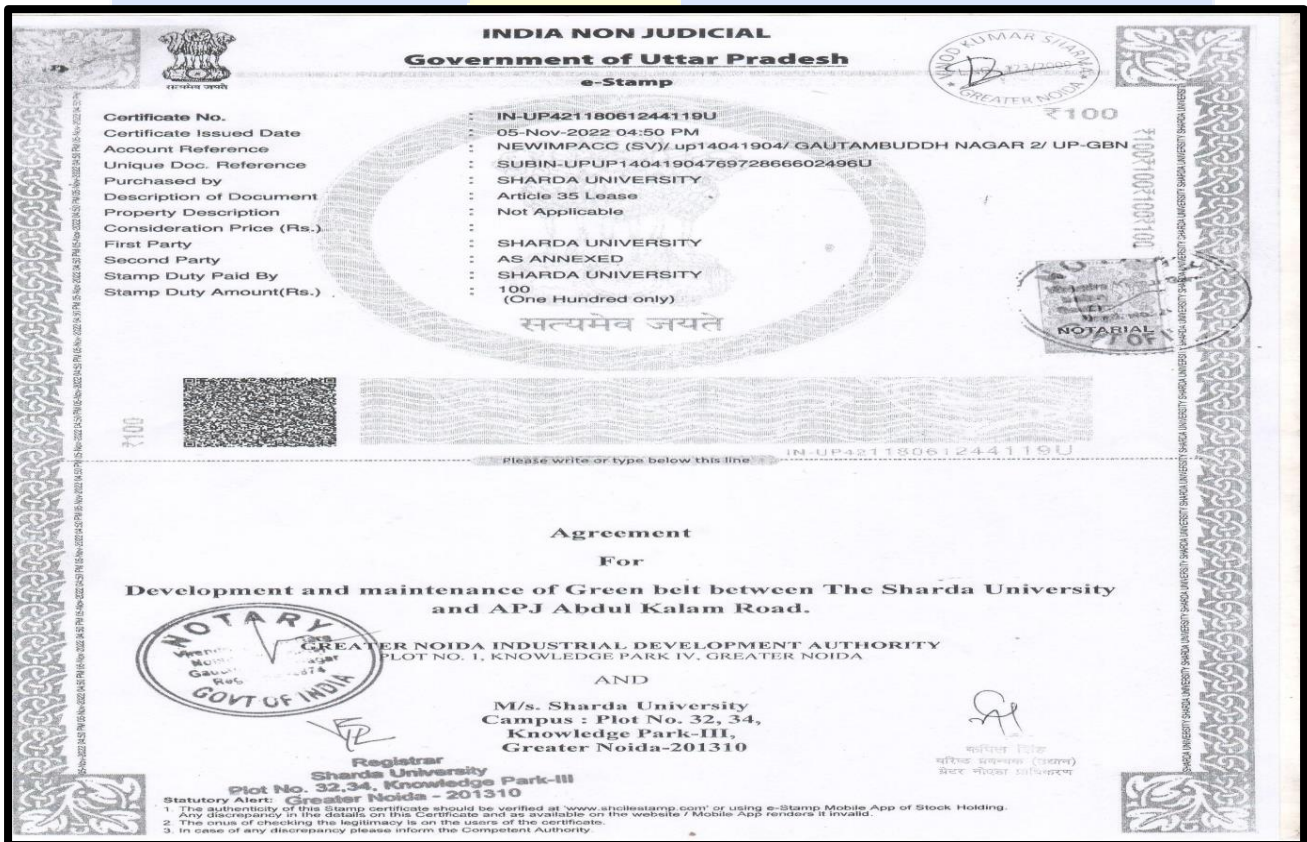
[Signature]
Executive President

30 March 2023

Fig. 10: Certificate of Excellence for Sustainable Education

13.3.2 Climate Action Plan, Shared

Response: Various MoUs have been signed with different academic and government bodies related to climate change and action plans.



Date of execution of agreement: ...12.06.23

Date of Effectiveness:- ..13.06.23

Date of Completion:- ..12.06.26

Signage & Nos. of Boards:-05 Boards

This Agreement (hereinafter called the "Agreement") is made the day of the month of Between, on the one hand, **Greater Noida Industrial Development Authority** (hereinafter called "Authority" or "GNIDA") and, on the other hand, **M/S. Sharda University** (hereinafter called "the Adopter").

WHEREAS

a) The Adopter has agreed to adopt the Green Area on behalf of Greater Noida Industrial Development Authority and the Scope of Work for the Adopter shall include but not limited to the following:

- Development & maintenance of Green Area
- Cultivating flower beds, trees and shrubs
- Cultivating Vegetables/Food gardens/Community Gardens
- Raking Leaves
- Picking up litter
- Removing graffiti
- Pulling Weeds

The Adopter shall be responsible for maintenance & development of the adopted Green Area and the entire cost thereof shall be borne by the Adopter. The Term of Agreement shall be initially for a period of 3 years. The Adoption term may be renewed or extended for another period of 2 (two) years should the performance found satisfactory by the Authority after the Authority has made its own due evaluation.


NOW THEREFORE the Parties hereto hereby agree as follows:

- e) The following documents attached hereto shall be deemed to form an integral part of this Agreement:
- a. Application Form
 - b. General conditions of Agreement
 - c. Annexure B: Location and Area Details of Adopted Green Area
 - d. Annexure C: Operational Plan for Adoption
- f) The mutual rights and obligations of the Authority and the Adopter shall be as set forth in the Agreement.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be signed in their respective names as of the day and year first above written.

For and on behalf of the Greater Noida Industrial Development Authority (GNIDA)
In Charge, Horticulture Department, GNIDA

For and on behalf of << M/s Sharda University >>
<<Signing Authority for the Adopter>>


Registrar
Sharda University
Plot No. 32,34, Knowledge Park-III
Greater Noida - 201310



वरिष्ठ प्राध्यापक (उद्यान)
ग्रेटर नोएडा प्राधिकरण

Fig. 11 & 12: MoU with Greater Noida Industrial Development Authority

13.3.3 Co-operative Planning for Climate Change Disasters


Response: Community connect course is mandatory for visit to the local community groups

Sharda University plans visit to nearby community villages for sharing the measures with the local community groups through awareness and series of questionnaires to collect the ground data for enlightening them. The University has a policy to conduct the community outreach and awareness programs in the society to make the people about the climate change. Community connect is a part of course structure with 2 credit weightage to make it mandatory for the students to visit the village to understand their issue, connect with them and suggest proper solutions and raise awareness.

Sr.No	School Name	Topic	Place of visit	Date of visit
1	SSBS	Creating awareness about Environment and Climate change among individuals in the community in general	Greater Noida	26/2/2024 to 2/3/2024
2	SSBSR	Impact of Climate Change on Crops Adaptation and Strategies to Tackle Its Outcome	Kherli Hafizpur, Near Dankaur, Greater Noida	17-02-2023
3	SSBSR	Role of Keystone species in reducing global warming	Kherli Hafizpur, Near Dankaur, Greater Noida	17-02-2023
4	SSBSR	Awareness about carbon footprint	Kherli Hafizpur, Near Dankaur, Greater Noida	17-02-2023
5	SOL	Impact of climate change on rural agriculture: Adaptation strategies and resilience building	Behlopur, Greater Noida	19-01-2024
6	SSAS	Assessment of the impact of climate change on crop production and the management practices adopted by the farmers	Khurshedpura village, Greater Noida	19-02-2024

13.3.4 Inform and Support Government

Response: University conducts several knowledge sessions and training programmes for disaster preparedness



EVENT COMPLETION REPORT

Please prepare the report signed by the program Secretariat/Program coordinator within 10 days of event completion for record. Reports should be 2-4 pages.

SECTION A: Event Detail

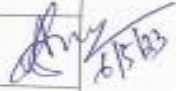
Event title:	Disaster Management for Faculty and students		
Date of the event:	25-04-2023	Duration of Event (in days)	1
Name of the event organizing School	SHSS		
Name of the event organizing Department	SHSS		
Sponsor of the Event (Sharda University in case of internal sponsorship)	Sharda University		
Committee Members:	Patron	Prof (Dr.) Anviti Gupta 	
	Convener	Dr. Shradha	
	Coordinators	Dr. Saurabh Shrivastava Dr. Ritu Chaku	
	Co-coordinators	Dr. Ashu Kumari	
Chief Guest/ Guest of Honor with affiliation (If any)	Shri Vinod Bharadwaj		
Name of Speaker/s with affiliation (If any)	Shri Dalbir Singh	Master Trainer	
	Shri Sher Singh	Trainer	
	Shri Rakesh Kumar	Trainer	

Fig. 13

SECTION B: Event Report and Reflection

1. Event Objectives- This event focused on sensitizing the students and faculty to what are emergency situations which are disastrous in nature, a disaster can be natural or manmade event which results in widespread human loss, loss of livelihood, property, vegetation and so on. Natural Disaster can be classified as Atmospheric, Terrestrial, Aquatic, Biological. The Chief guest and Speakers, trainers were invited from Organization of Disaster Managers, New Delhi. The organization aims to build a safer and disaster resilient India by a holistic, pro-active, technology driven and sustainable development strategy that involves all stakeholders and fosters a culture of prevention, preparedness and mitigation.

2. Event Description Hence it was a hands-on, practical experience for SHSS faculty and around 250 students (youth of our country) who were sensitized to disastrous events/mishaps in which how can they handle the situations and help to give first aid, administer CPR, lifting up the casualties in various different ways and escaping from the fire area, earth quake area to handle disastrous situations like earthquake, fire incidents, etc Ten students of SHSS volunteered in various activities during this event.

1. Participants (Compulsory for Events):

S. No	Total Participants	Number of Male	Number of Female
	275	136	139

2. Budget distribution from University/any other agency: 1500 rupees

3. Appendices

Please attach the following details in the report

Note that the participant contact list is a mandatory requirement.

1	<p>Participants feedback on the organized program. The summary is based on the responses received from 207 participants. 156 out of 207 who attended the webinar were students. 140 were from the Department of Psychology, rest were from history, political science, sociology and education. Many participants volunteered for physically learning the life-saving acts with their partner friends. The speaker addressed every participant's query. The participants found the session to be very interactive. Almost all the participants found the session very useful. Majority of the students reported that the session was very relevant and easy to understand. Most of them reported that the speaker had command over his subject. Two third of the participants felt that they got to know many situations which may be fatal for others but</p>
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Fig. 14

	lives can be saved if one is willing to help and knows the right techniques to save others appropriately.
2	<p>Event Agenda- The event intended to support and motivate students for their chosen stream. The agenda also included assistance to the students in the process of career decision-making.</p>
<i>Rhotog</i>	<p><i>Photos of the event</i></p>


Fig. 15

13.3.5 Environmental Education Collaborate with NGO

Response: University engages students, faculty in environmental and climate awareness through academic networking with all possible stakeholders including government agencies and NGOs

The University has a vision to have collaboration with the other Universities, Government and Non-Government organizations on the matter of the Climate action. The University has the policy to have maximum involvement of the students in the Climate Action Plan and Framework developed. The University has the policy to avoid use of the Plastic on Campus. The University has a policy to encourage and educate the students to save electricity and void carbon emission. The University has the policy to keep the university activities synchronized with the research reports published by the various climates monitoring organization. Considering the changing scenario of the climate, the University has focus to update the climate change framework, as and when required and specified by the State Government, Central Government and various regulatory bodies including the guidelines given by the University Grants Commission.

University collaborates with NGOS for tree plantation drive and celebration of earth day for sensitising the public and students for environmental conservation. Several campaigns for effect of climate change such as dengue spread and their awareness for erratic rainfall and the spread of water borne diseases due to climate change has been conducted.



SHARDA UNIVERSITY
WISDOM BEGETS IDEAS

Event Completion Report

Section A: Event Details

Event title:	Earth Day Celebration		
Starting date of event:	16 th April, 2023	Duration of Event (in days)	01 Day
Name of the event organizing School	Sharda School of Design, Architecture and Planning		
Name of the event organizing Department	Architecture		
Sponsor of the Event (Sharda University in case of internal sponsorship)	Sharda University		
Event Calendar Link:	https://shorturl.at/CDEK1		
Committee Members:	Advisor	'Tears of Earth' - NGO	
	Convener	Dr. (Prof.) Dipti Parashar (Associate Dean SSDAP)	
		Associate Prof. Abhay Kaushik (HOD, Department of Architecture, SSDAP)	
Organizing Secretary	Dr. Krishna Kumar Pandey, coordinator, NSS Cell (Sharda University)		
		Ms. Sonam Batra Dr. Nikhat Parvez Mr. Shahzeb Rahman Ms. Namita	

1

Associate Dean
Sharda School of Design, Architecture and Planning
Sharda University
32,34 Knowledge park - II
Greater Noida - 201310

Fig. 16

Name of Speaker/s with affiliation and Contact Details

- Mr. Rumi Walia , Manager, Youth Initiatives – India, EARTHDAY.ORG, 9654940577, walia@earthday.org

SECTION B: Event report and reflection

Program Objective:

This event had following objectives: -

- To instil social responsibility, groom overall personality and create awareness on social issues.
- To learn that Clean Up will build environmental stewardship and teach students the importance of reducing, reusing, and recycling to decrease the amount of waste we produce.

Program Description:

Department of Architecture, School of Design, Architecture and Planning (SAP), Sharda University has organized an Earth Day for 1st Year and 2nd Year B. Arch Students in collaboration with NSS Cell (Sharda University) and NGO 'Tears of Earth'.

Participants:

Total No. of Participants	Number of Male	Number of Female
36	19	17

List of Faculty:

List of Faculty	
SR. NO.	NAME
1	Ms. Sonam Batra
2	Dr. Nikhat Parvez
3	Mr. Shahzeb Rahman
4	Ms. Namita

Ua
Associate Dean
Sharda School of Design, Architecture and Planning
Sharda University
32-34 Knowledge park - II
Gurgaon Noida - 201310

Fig. 17

SHARDA UNIVERSITY			
Sharda School of Design, Architecture & Planning			
B.Arch. 1st year			
Department- Architecture			
Clean Up Drive Celebrating Earth Day - 16-04-2023			
S.no.	System ID	Name	Signature
1	2022812406	Ahamada Houlayfat	
2	2022816648	Annah Careen Ramsey	
3	2022379988	Arhee Borkotoky	
4	2022480865	Ayushi	
5	2022404402	Chinmoyee Kalita	
6	2022492641	Jerry Nepram	
7	2022473417	K Lalhruaizeli	
8	2022503361	Mohd Arshad	
9	2022004939	Mohd Mazin	
10	2022802889	Poni Fidencia Tombe Loro	
11	2022445861	Razi Ahmad	
12	2022003593	Rohan Kaushik	
13	2022417075	Sameer .	ABSENT
14	2022005287	Saurabh Kumar	
15	2022005120	Shubham Kumar	
16	2022535629	Siddharth Sharma	ABSENT
17	2022554306	Swati Raman	
18	2022522700	Vanlalawmpuii .	
19	2022008169	Vishv Ajay Mittal	
20	2022353953	Yashdeep Singh	

27/04/23
 Associate Dean
 Sharda School of Design, Architecture and Planning
 Sharda University
 32,34 Knowledge park - III
 Greater Noida - 201310

Fig. 18

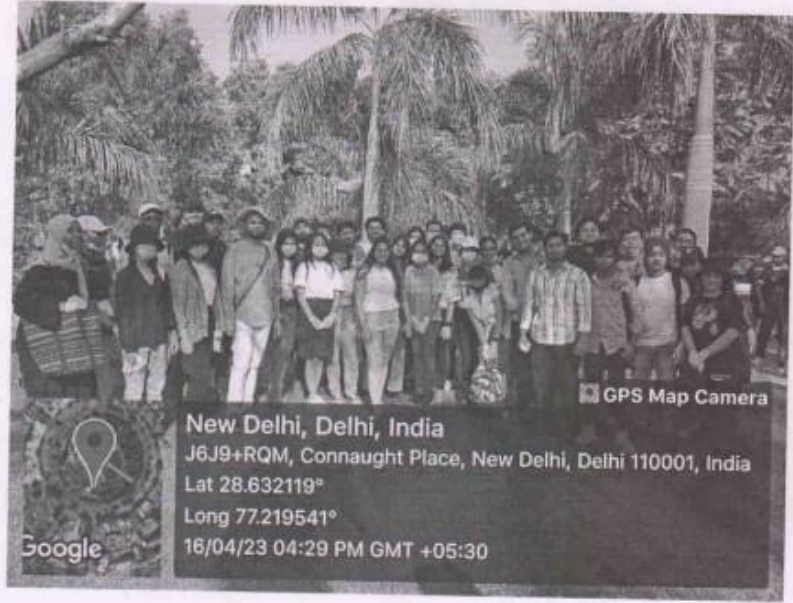
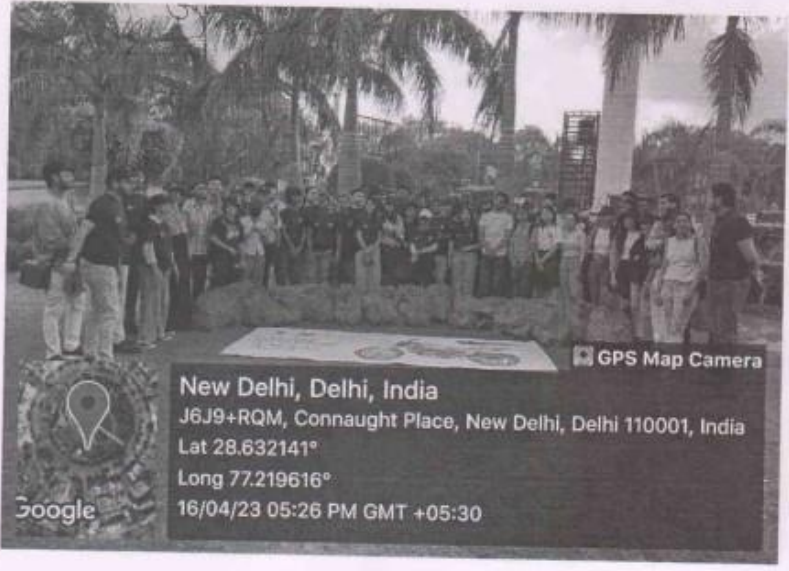
SHARDA UNIVERSITY
Sharda School of Design, Architecture & Planning
B.Arch. 2nd year
Department- Architecture
Clean Up Drive Celebrating Earth Day - 16-04-2023

S.No	ID	Roll No	Name	Signature
1	2021517846	210695001	Ankita Sharma	
2	2021461595	210695003	Dolly Bansal	
3	2021431493	210695004	Harshdeep Singh Viridi	ABSENT
4	2021365453	210695005	Khushi Tripathi	
5	2021518096	210695006	Kostuhh Keshwan	Kostuhh
6	2021352920	210695007	Kunal Singh	
7	2021359992	210695008	Lalhmingsangi .	ABSENT
8	2021816987	210695009	Mudita Mahto	
9	2021374806	210695011	Priyanshu Kumar	
10	2021305782	210695012	Rahul J Thachil	
11	2021416712	210695013	Rebecca Lalhmingsangii	
12	2021300147	210695014	Sana Shujat	
13	2021429638	210695015	Sthapana Sarmah	
14	2021487204	210695016	Ugyen .	
15	2021804684	210695017	Utsha Chandra Das	
16	2021001321	210695018	Vivek Panwar	
17	2021405260	210695019	Yashi Pushpgandha	
18	2021341134	210695020	Zaid Ahmed	ABSENT
19	2021828546	210695021	Abhinab Panta	
20	2021823017	210695022	Ahassan Bala Jibrin	ABSENT
21	2019003807	190695023	Mohd. Kamil Khaliq Ansari	
22	2020001760	200695006	ALFRED LALRUATLIANA	ABSENT

Handwritten mark
 16/04/23
 Associate Dean
 School of Design, Architecture and Planning
 Sharda University
 12, 34 Knowledge park - III
 Meerut Noida - 201310

Fig. 19

Geo-Tag Photographs:



3
[Signature]
27/04/23
Associate Dean
Sharda School of Design, Architecture and Planning
Sharda University
32.34 Knowledge park - III
Greater Noida - 201310

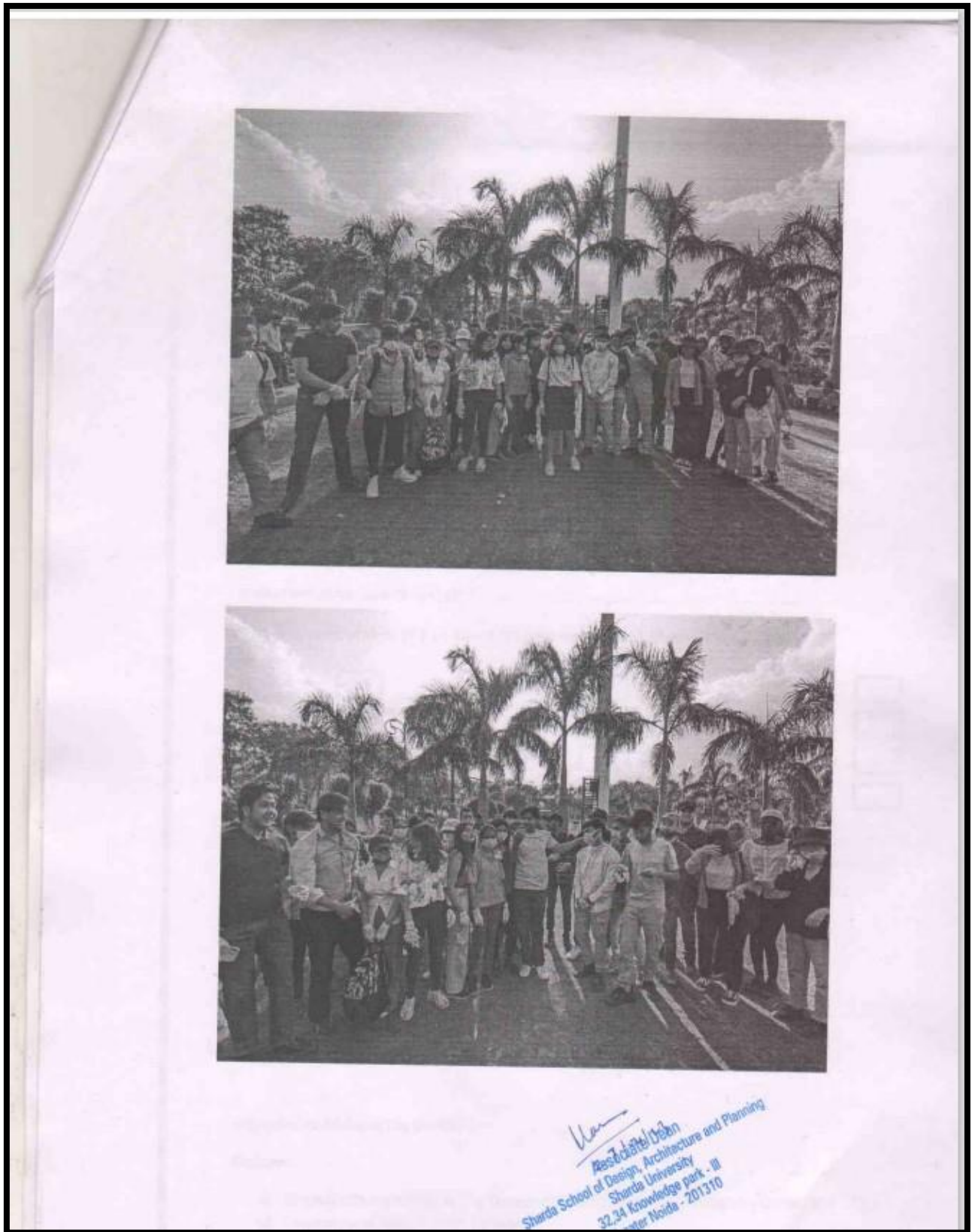


Fig. 20 & 21: Students Visit to NGO at Panchsheel Balak Inter College, Noida
SOE | 2nd December 2022

Event Completion Report

Section A: Event Details

Event title:	Students Visit to NGO at Panchsheel Balak Inter College, Noida SOE 2nd December 2022		
Starting date of event:	2nd December 2022	Duration of Event (in days)	1 Day
Name of the event organizing School	School of Education, Sharda University		
Name of the event organizing Department	School of Education, Sharda University		
Sponsor of the Event (Sharda University in case of internal sponsorship)	NA		
Event Calendar Link:	hardaevents.com/event/students-visit-to-ngo-at-panchsheel-balak-inter-collegenoida-a-nodal-centre-ghumantu-bacho-ki-pathshala-in-collaboration-with-youth-rocks-foundation-dehradun/?instance_id=14760		
Committee Members:	Advisor	NA	
	Convener	Prof. (Dr.) Arti Koul Kachroo, Dean, School of Education, Sharda University, arti.kachroo@sharda.ac.in, +919971992154	
	Co-Convener	Dr. Rinkal Sharma, Assistant Professor, School of Education, Sharda University, rinkal.sharma@sharda.ac.in, +919899754418	

Fig. 22

Name of Co-Ordinator	Co-Ordinator Details:
	<ul style="list-style-type: none"> • Dr. Divya Negi Ghai, Founder Youth Rocks Foundation • Dr. Pooja Gusain, Ex. Faculty of Amity University and member of Youth Rocks Foundation • Mr. Shanti Prashad, Founder, Ghumantu Bacho Ki Pathshala
	Student Co-ordinator:
	<ul style="list-style-type: none"> • Ms. Suniti Singh, Class representative of B.A.B.Ed. Semester V. • Dilip Kumar Maurya B.A.B.Ed. Semester V • Abhishek Singh Baliyan B.A.B.Ed. Semester V

SECTION B: Event report and reflection

Program Objective:

- To increase awareness among the students about dengue prevention.
- To widen availability of community-based resources
- To improve the students' social skills
- To provide kids from underprivileged backgrounds with important support

Program Description:

As part of the Community Connect Programme on 2nd December 2022, School of Education, Sharda University is organizing Student's visit to NGO at Panchsheel Balak Inter College, a nodal centre named, Ghumantu Bacho Ki Pathshala in collaboration with Youth Rocks Foundation, Dehradun. Youth Rocks Foundation is a youth driven social impact nonprofit organization operating in Uttarakhand and nearby regions. The NGO focuses on providing holistic support to youngsters battling with multiple dangerous distractions of a modern life. Their mission is to improve quality of life and outcomes for youngsters and ensure that every youngster is able to fulfil their highest potential irrespective of their background or circumstances. B.A.B.Ed. Students of School of Education have stepped forward to provide volunteer work for this noble cause. Students will conduct a dengue awareness campaign. Dengue is currently affecting a significant portion of the population in India and is the vector-borne illness with the fastest global expansion. This programme is designed to increase awareness among the students of that NGO, since there is a dearth of awareness of the problem that affects so many individuals.

Participants:

Total No. of Participants	Number of Male	Number of Female
20	3	17

Fig. 23

1.	Varsha	Varsha
2.	Suniti	Suniti
3.	Vidya	Vidya
4.	Muskan	Muskan
5.	Vaishali	Vaishali
6.	Abhishek	Abhishek
7.	Anamika	Anamika
8.	Aaryan	Aaryan
9.	Aayushi	Aayushi
10.	Anjali	Anjali
11.	Komal	Komal
12.	Prachi	Prachi
13.	Rewa	Rewa
14.	Dilip	Dilip
15.	Shivani	Shivani
16.	Prityanshi	Prityanshi
17.	Maheshwari	Maheshwari
18.	Ahana	Ahana
19.	Dolly	Dolly
20.	Diksha	Diksha

Fig. 24: Participant List





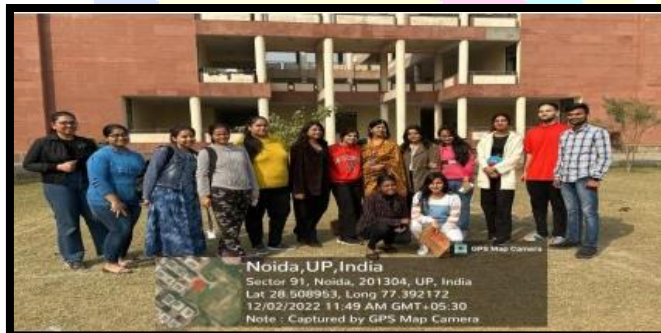
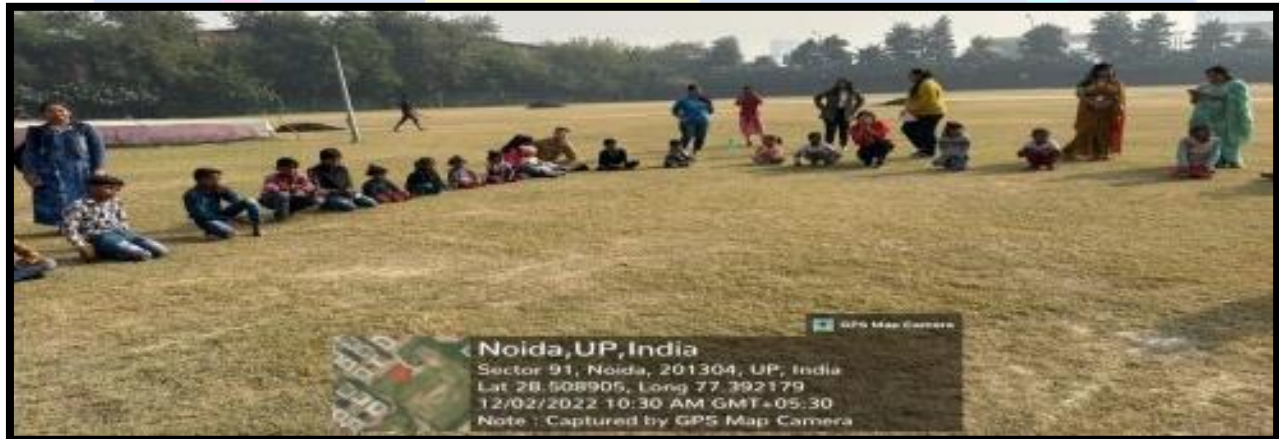
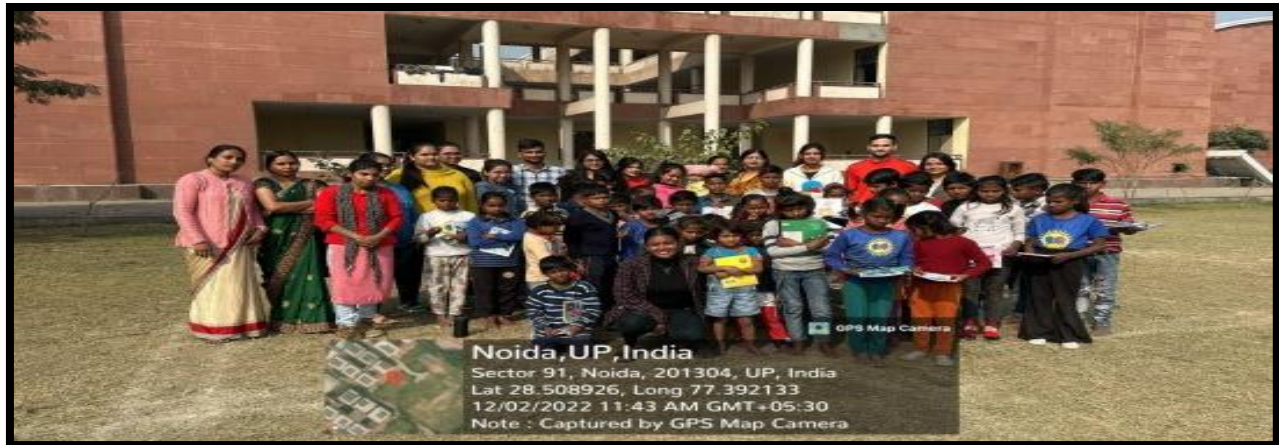


Fig. 25-35: Geo-Tag Photographs

Other Information

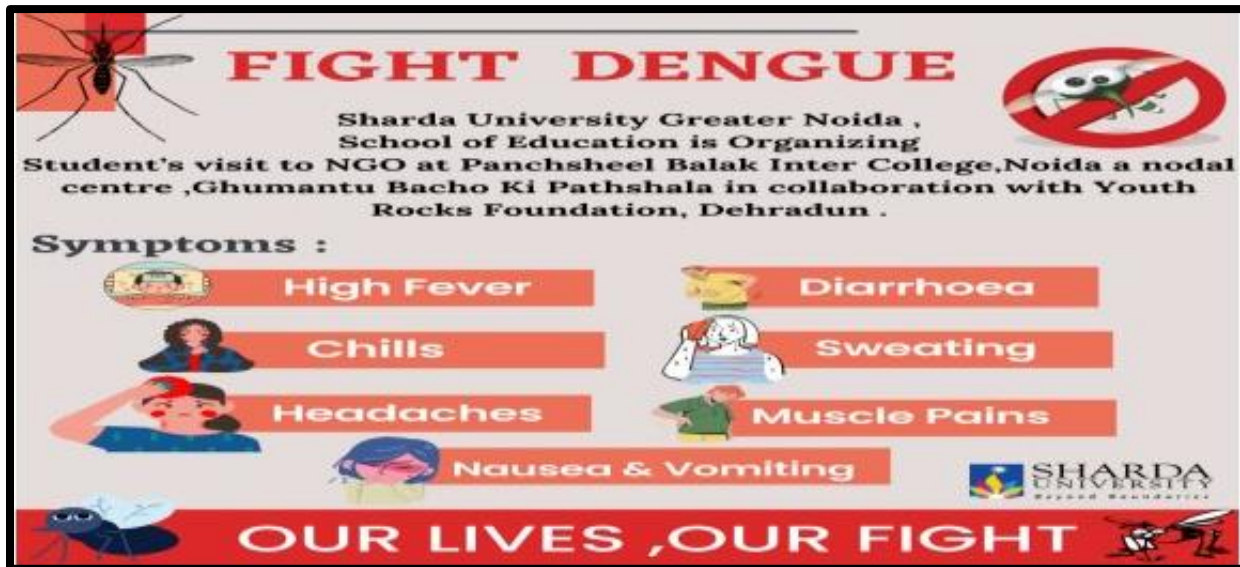


Fig. 36: Event Card

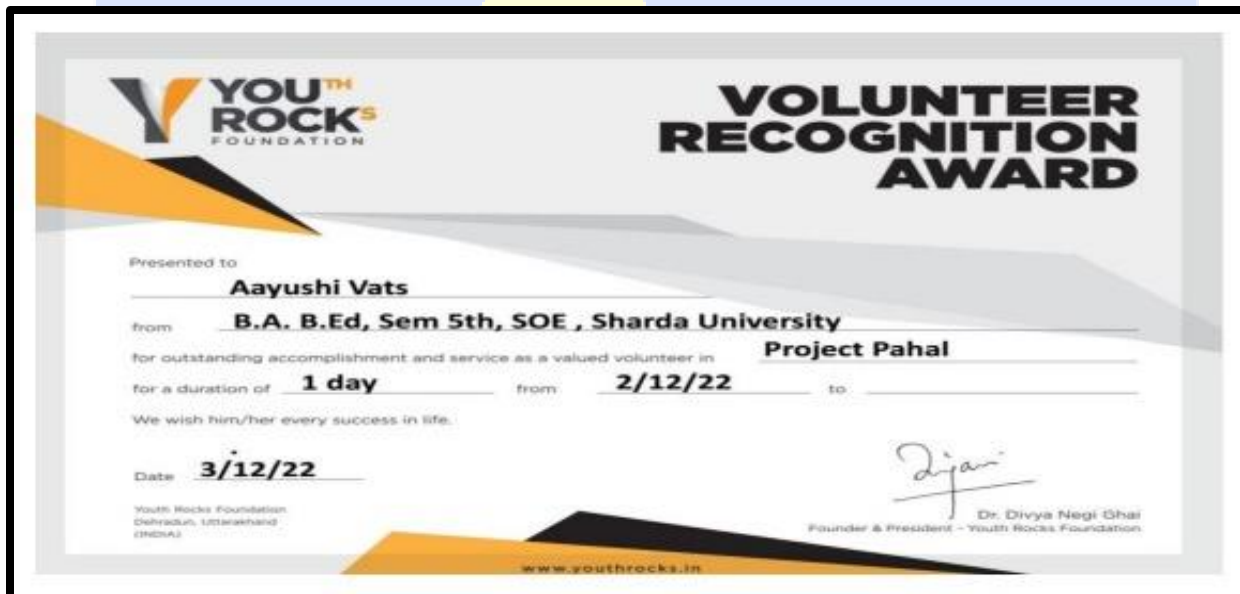


Fig. 37: All the students were provided with the certificate

13.4 Commitment to carbon neutral University

Response: Carbon Neutral target is achieved directly by Solar PV Cells and indirectly by travel, waste and water management, and material procurements.

Sharda University ensures Campus Carbon Neutrality through a series of action points including the reduction of grid energy dependence by switching to Solar PV. The policy covers major areas of climate action and adaptation and provides an opportunity for the inclusion of appropriate

aspects which help to achieve carbon neutrality. Sharda University manages direct emissions and indirect emissions through travel, waste and water management, and material procurements. University is functioning in compliance with the climate action working plan, which addresses local (i.e. rainwater harvesting plan to reduce water footprint), and global (i.e. shifting to low carbon-based energy sources to reduce the carbon footprint of campus) climate concerns.

University is performing better in terms of wastewater treatment (in-house wastewater and sewage treatment, WTP, and STP), solar energy installation, rainwater harvesting, waste management, material procurement (paperless office and e-governance), transport (community transport for faculty and students).

University also organized several such capacity building programmes and Tree Plantation Drive for achieving carbon neutrality indirectly.



Fig. 38: Sewage Treatment Plant

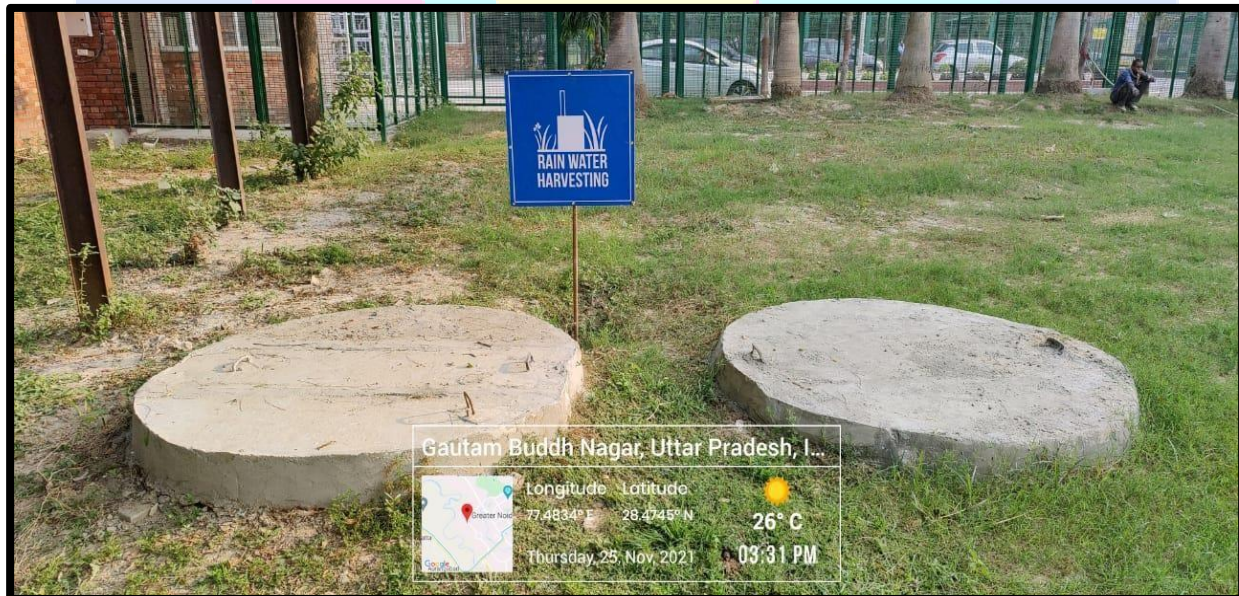


Fig. 39: Rain-Water Harvesting System



Fig. 40: Earth Day Celebration



Fig. 41: Environment Club with NCC Wing of Sharda University for Swachh Bharat Abhiyan

