

**REPORT
OF
ENVIRONMENTAL/GREEN AUDIT
OF
GOVERNMENT GENERAL DEGREE
COLLEGE, SINGUR
Jalaghata, Singur, Hooghly-712409**



2023-2024

**INTERNAL QUALITY ASSURANCE CELL
GOVERNMENT GENERAL DEGREE COLLEGE SINGUR**

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Date: 24.09.2024

To
The Principal
Government General Degree
College, Singur

Respected Sir,

This is to request you that the 'Green Audit' of our college is due for the session 2023-2024. Please take necessary action for the same.

Regards

Chaitali Chaudhuri

Dr. Chaitali Chaudhuri
IQAC Coordinator
Government General Degree College, Singur

**Coordinator
IQAC
Govt. General Degree College
Singur**



RANI RASHMONI GREEN UNIVERSITY

TARAKESWAR, HOOGHLY

Present Address: Government General Degree College, P.O.- Singur, Dist. Hooghly, PIN-712409

Phone +91 9433904830, email: rrgu18@gmail.com

Date: 21.11.2023

Certificate

It is hereby certified that the Department of Environmental Science of Rani Rashmoni Green University has conducted the Environmental assessment and audit of the campus of Government General Degree College, Singur for the year 2023-2024 after physical verification and necessary assessment and prepared the report of Green Audit, Energy Audit and Environment Audit with necessary recommendations for future.

Registrar (Officiating)
Rani Rashmoni Green University,
Hooghly, West Bengal

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No life can survive without a suitable environment. Nowadays urbanization, industrialization, and population outburst are the main blazing issues for the degradation of suitable environments on earth. Consequently, animals, plants, and human beings have to face the adverse effects of pollution like air, water and soil. Environmental audit or Green audit is a general term that can reflect various types of evaluations intended to identify environmental compliance and management system implementation gaps, along with related corrective actions, analogous (similar) to financial audits. The term “Green” means eco-friendly or not damaging the environment. This is also known as “Global Readiness in Ensuring Ecological Neutrality” (GREEN). “Green Auditing”, an umbrella term, is known by another name “Environmental Auditing”. Green Audit can also be defined as systematic identification, quantification, recording, reporting and analysis of components of environmental diversity. The ‘Green Audit’ aims to analyze environmental practices within and outside the system, which will have an impact on the eco-friendly ambience. It is based on exercises that can help to measure the risk to the health of inhabitants and the environment. Through Green Audit, one gets a direction as how to improve the condition of environment and there are various factors that have determined the growth of carrying out Green Audit. This includes the plants, greenery and sustainability of the system to ensure that the lifestyle conform to green standards.

Environmental issues are not only part of the debate and discussion, but it is also high time to take action. The assessment of resource utilization of any institution and its management is the key approach to understanding the scenario scientifically and as well as methodically. Therefore, it is important to conduct this kind of survey work in different sectors of our society from industry to housing complexes at regular intervals. Literally, ‘Green Audit’ can be defined as the systematic identification, quantification, recording, reporting and analysis of components of environmental diversity. It was first implemented in the United States in the early 1970s by some companies incommensurate with the Clean Air and Clean Water Act. After decades, some Asian countries were inspired by the Rio Earth Summit, in 1992. India is the first country to arrange environmental auditing for a compulsory purpose in every industry from 2006 (according to National Environmental Policy). To understand the responsibility of establishing green audit programs is allocated to criteria 7 of NAAC (National Assessment and Accreditation Council) which declares grades of institutions (like A, B, or C), interpreting the scores assigned at the time of endorsement. In this national systematic process, any institution can access the current scenario, its usage, utilization, risk factors, etc. By knowing these, reliable suggestions, applicable interventions, improvisation, or improvements can be implemented shortly.

The overall programme is a bunch of surveys on the evaluation of Water Utilization, Green Campus Management, Biodiversity Wealth, Energy Utilization, Solid Waste Management, Plastic Waste Recycling, and Carbon Footprint Management of the targeted institution. It is not only a one-time process, it’s a kind of continuous practice, cross-checking, and adaptation for the institution in many aspects.

METHODOLOGY

The process of comparative assessment and evaluation of several resources used by the institution provides sustainability by creating a green campus. It is the process of making checklists of flora and fauna, energy consumption, waste management, water use, plastic-free campus, *etc.* Actually, the survey helps to develop the present infrastructure of the institution in a more eco-friendly and economical way. It enhances the environmental responsibilities and builds awareness among all the involved members and beneficiaries.

The green audit also involves assessment of water utilization, energy utilization and conservation, and efforts of carbon neutrality and waste management. The ultimate aim is to decrease the ecological footprint and achieve sustainability.

In order to perform green audit, the methodology included different tools such as preparation of questionnaire, physical inspection of the Institution, observation and review of the documentation and data analysis, measurements and recommendations. The study covered the following areas to summarize the present status of environment management in the campus:

- Water management
- Energy Conservation
- Waste management
- Green area management

1. WATER AUDIT: *Evaluation of Water utilization*

A water audit is an on-site survey and assessment to determine the water use and hence improving the efficiency of its use and method(s) of conservation. Water is life. No activities can be done without water during the day and night. India will become a water-stressed country very soon because of surface water pollution and the severe excretion of groundwater. A leaky tap wastes more than 180 liters/day. So, water security is becoming a main concern in India. Water utilization is the process of quantifying water usage, water wastage, facilities, or the mode of water treatment or reuse. The evaluation can help to assess the present scenario of water utilization by different departments and its sustainable usage for the future.

2. ENERGY AUDIT: *Evaluation of Energy utilization*

The green audit also involves assessment of energy utilization and conservation. Energy utilization is the quantification method of energy sources, power consumption, maximum efficiencies, optimizing energy requirements, *etc.* For example, 60-100 W is generally used for old incandescent bulbs, but LED bulbs can be used instead of incandescent bulbs as it consumes less than 10 W power. Therefore, such a type of evaluation can help to understand the best possible usage of electricity and power consumption for departments, offices and other sectors of the institution for the future.

3. BIODIVERSITY AUDIT:

- a. *Assessment of Biodiversity wealth:* Flora and fauna all are linked in an ecosystem by several aspects with each other. So, biodiversity is an important component of ecosystems, and its assessment is also necessary for any academic institution. Through the biodiversity wealth assessment, the presence of local species, their importance and abundance can be accessed.
- b. *Evaluation of Green Campus management:* It involves initiatives for conservation and efforts of carbon neutrality. Trees are very important in maintaining a balance of CO₂/O₂ concentration in ecosystems. A mature tree absorbs 48 pounds of CO₂ a year. No replacement for the tree is found. Through the green campus management survey, estimation and maintenance of flora and fauna can be evaluated; hence, the necessity of a seasonal plantation programme or sustaining the other biodiversity will be defined.

4. WASTE AUDIT:

- a. *Evaluation of Solid Waste Management:* In general, solid waste can be divided mostly into three categories: biodegradable, non-biodegradable and hazardous waste. Biodegradable wastes include different types of food waste, waste products from the canteen/ kitchen, wastes from toilets/latrines etc. and many such items which are totally degradable to soils. Non-biodegradable wastes contain different types of thrown-away items like tins, plastic products, thermocol items, glass goods etc. which are not degraded in nature. Hazardous wastes mostly create unexpected problems for human health and the surrounding environment like cleaning chemicals, acids' products, waste from laboratories and different types of fuel. So, biodegradable waste can be applied for energy generation, manure use for gardening and other such works but non-biodegradable waste should be reused and recycled. Through Waste Management, the number of solid wastes as a regular product of the institution, their present fate, further utilization and practice to improve waste reduction can be pointed out.
 - b. *Evaluation of Plastic Waste Recycling:* A special assessment of the presence and production of plastic waste is also done by Plastic Waste Management. The number of plastic wastes from the institution, waste reduction policies, and adaptation of reuse and recycling methods can be assessed in that process. The harmful and long-term impact of plastic (mostly single-used plastic) items and their' product in our daily life should be controlled.
 - c. E- waste management:
5. **EVALUATION OF CARBON FOOTPRINT MANAGEMENT:** Fossil fuels degrade the environmental quality and raise the effects of greenhouse gases. Among greenhouse gases, CO₂ comprises almost 421 ppm of the Earth's atmosphere. Carbon emission source and rate (if any), the reduction of such emissions, eco-healthy utilization of fuel and non-smokey products *etc.* can be diagnosed through the assessment of Carbon Footprint Management.

Basic requirements:

1. This survey has several steps such as pre-evaluation, evaluation, and suggestions. For completion of this kind of work in any institution, discussions, interviews, and questionnaire surveys are generally carried out with the regular staff, stakeholders of the institution, senior members and even visitors and supervisors to know as much as possible details of different types of appliance usage, and consumption patterns, and impacts.
2. The pre-evaluation stage is also very important to know the history of the institution, its present status, and future plans for programmes and activities. It is mostly group work with various types of interactive sessions.
3. So, work had been divided by the surveyors into most of the cases for documentation of available information and records. Earlier data collection, accounting of former information and works of the institution, and more visits to the different sections of the site are also required for pursuing the fulfillment of the evaluation process.
4. Sometimes the institution's original records and documents (bills, equipment registers, purchase registers, magazines, annual reports, etc.) are needed for verification purposes. A proper work schedule should be maintained to conduct the programme. Details of administrative and academic information (appliances and utilization; usage per item; consumption pattern; impacts, etc.) should have been collected through pre-formatted datasheets.
5. After the data analysis report with the justification of wastage, comparison with a past report (if found), and revision of policies proper recommendations and suggestions are also necessary.

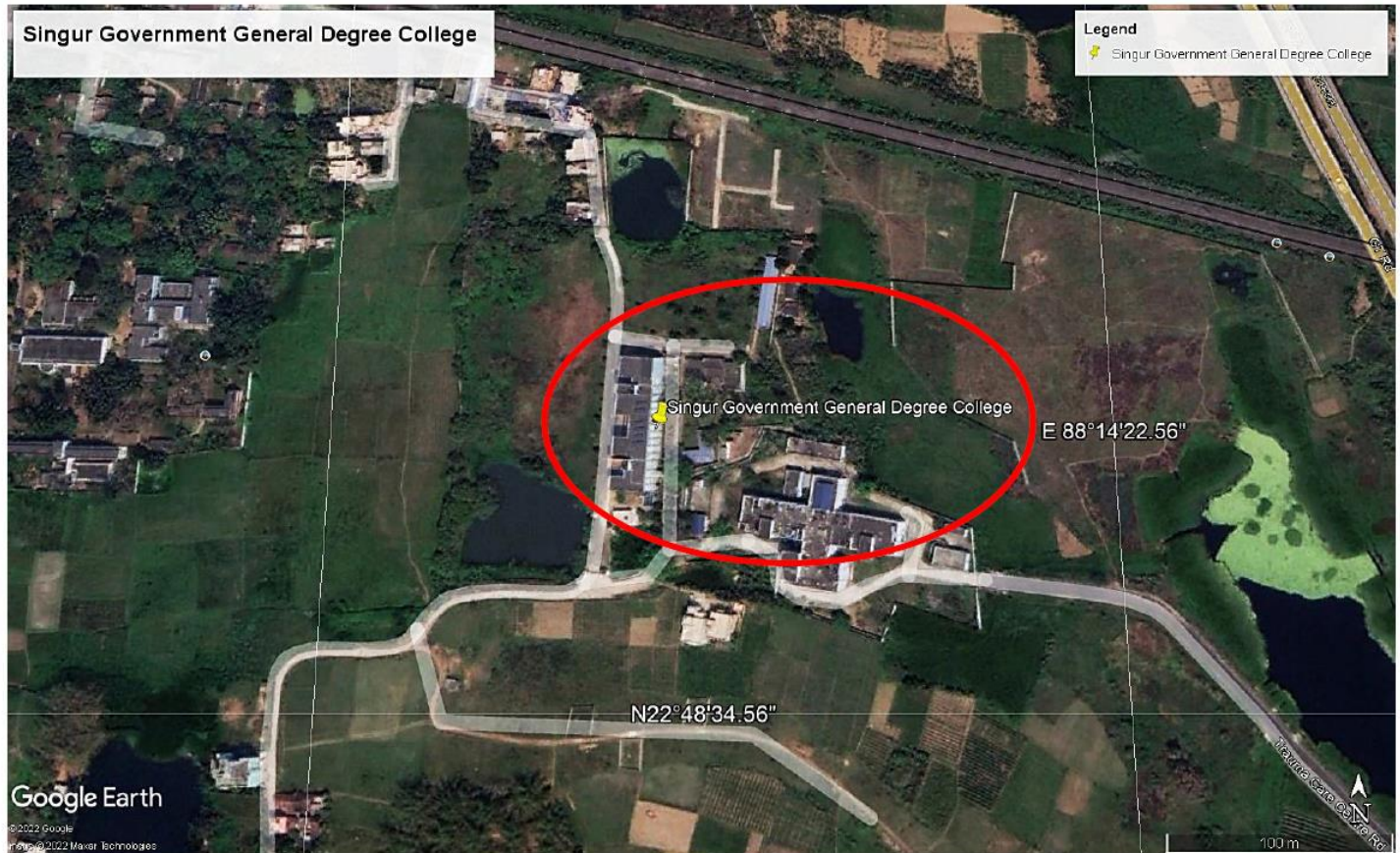
BACKGROUND STUDY:

ABOUT THE COLLEGE

The present study had been conducted at Government General Degree College, Singur, Hooghly, West Bengal. The college is an affiliated college under the University of Burdwan. This co-educational institution was established in 2013. As there was no institutional building of its own in the initial years, classes were held at a nearby school building. After two years, the college building was established in the present location and classes started in 2015 on its own campus. Presently, there are 19 Associate Professors (12 male and 7 female), 46 Assistant Professors (26 male and 20 female) and one librarian (Female) at the undergraduate level including the Hon'ble Principal Sir, Dr. Santanu Chakraborti. The institution also has 7 non-teaching staff (4 contractual data entry operators and 3 part-time sweepers). There are also 2 security guards and 2 night guards which are provided by a private agency. The institution starts at 10:30 AM and closes at 05.00 PM. The institution provides sixteen regular undergraduate Honours courses on science subjects including Zoology, Chemistry, Botany, Mathematics, Physics, Anthropology, Computer Science, Psychology (in both Science and Arts) and arts subjects including Philosophy, History, Bengali, English, Santhali, Sociology, Sanskrit and Political Science. The institution already ran three certificate courses (Computer Science course, English Translation course, Snake identification course etc.). The institution offers various workshops (like basic computer learning courses etc.) for students by inviting eminent resource persons, and delegates throughout the year. In the institution, there are some classes for Rani Rashmoni Green University on the second floor which offers three post-graduation courses (Environmental Science, Chemistry, and Computer Science) from 2020. Room, Faculty, and electrical bills are generally provided by the college. The total number of students is 890 (according to 2021). The National Service Scheme (NSS) unit activities have been carried out by the engaging students and they have performed different social awareness programmes (like - Red Ribbon Day in every area, Leaving Guppy fish in the pond for decreasing mosquitoes, Van Mahotsav Utsav, Covid-19 safety protocols, Thalassemia detection and awareness etc.) throughout the year. Several various scheduled annual activities for cultural events (Saraswati Puja, Rabindra Jayanti, Nejjaji birthday, Independence Day, Basanta Utsav etc.) have been performed at the college every year. College sports are held yearly in winter. Sometimes external tours and excursion programs are organized by departments like Anthropology, Zoology and Botany (2 times in a year). Moreover, many seminars, and webinars have been arranged by IQAC (International Quality Assurance System). The institution offers various vocational courses, and training programs (workshops) for students by inviting eminent resource persons, and delegates throughout the year and engages indifferent activities with different NGOs and institutions (like- Calcutta School of Tropical Medicine for organizing thalassemia camp at free of cost, Child Care, Association of Chemistry Teachers, WWF-India West Bengal State Office, NPTEL [local chapter] for doing SWAYAM course etc.). During the governmental election program, the college administration allows four polling camps and strong rooms inside their college premises by utilizing different rooms, and buildings and requiring official help with proper police guidance. The institution raised many posters for the campaigning of dengue awareness, covid protocols, recycling materials, sustainable development etc.

2.2. Location of the institution

The Government General Degree College, Singur is located in Singur, West Bengal-712409 (22.8108692°N; 88.2364074°E). The College follows traditional and ethical values and cultural practices. The total area of the institution covers almost 6.58 acres including the main building, and other house (for toilet uses) and the total building area covers almost 2.2acres and others 4.38 acres are open ground areas. Cycle stands (two) with a security guard or watchman house (one), one canteen and a water house were observed inside the college campus. There is no provision for staff quarters, hostel, guest house, etc. still now. The college also has one seminar hall.



Location of Government General Degree College, Singur (source: google earth)



Map of GOVERNMENT GEBERAL DEGREE COLLEGE SINGUR (Source: Google Earth)

2.3. Study Period

One week was selected in May, 2024 to complete the total survey program in different departments, office areas, canteen, common room, library, and other houses in the college campus by the team of Green Audit

Committee with the assistance of students of the college and students of Department of Environmental Science, Rani Rashmoni Green University. The program was further communicated later with the IQAC of the institution for any official need to finalize the report.

2.4. Mode of study

This survey has several steps such as pre-evaluation, evaluation, and suggestions. In the survey work, different types of questionnaires from earlier references and case studies were prepared and periodical interactions with present teaching and non-teaching staff and students were carried out to record several information about the present status of the institution. Personal observations, surveys, and photographic documentation were worked out to fulfill all the possible details for the programme.

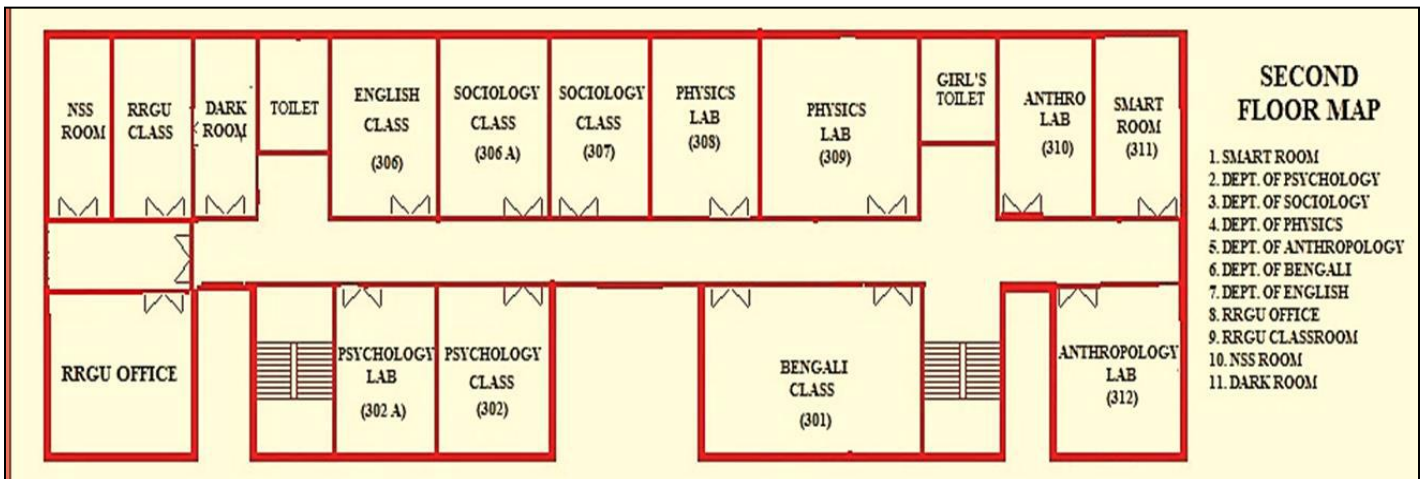
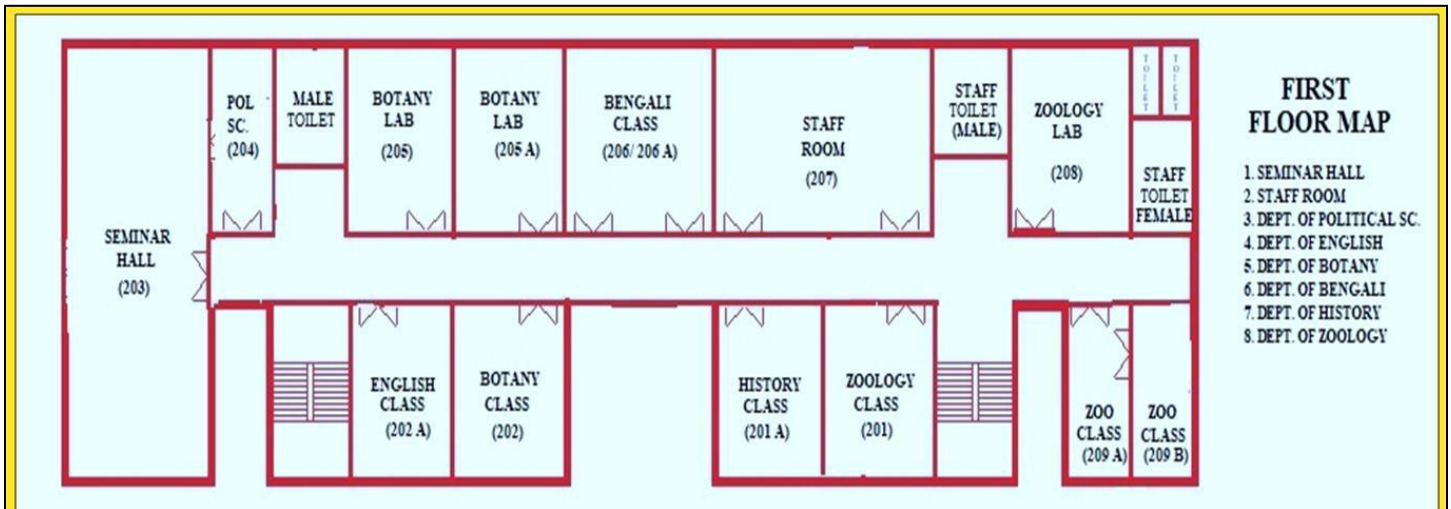
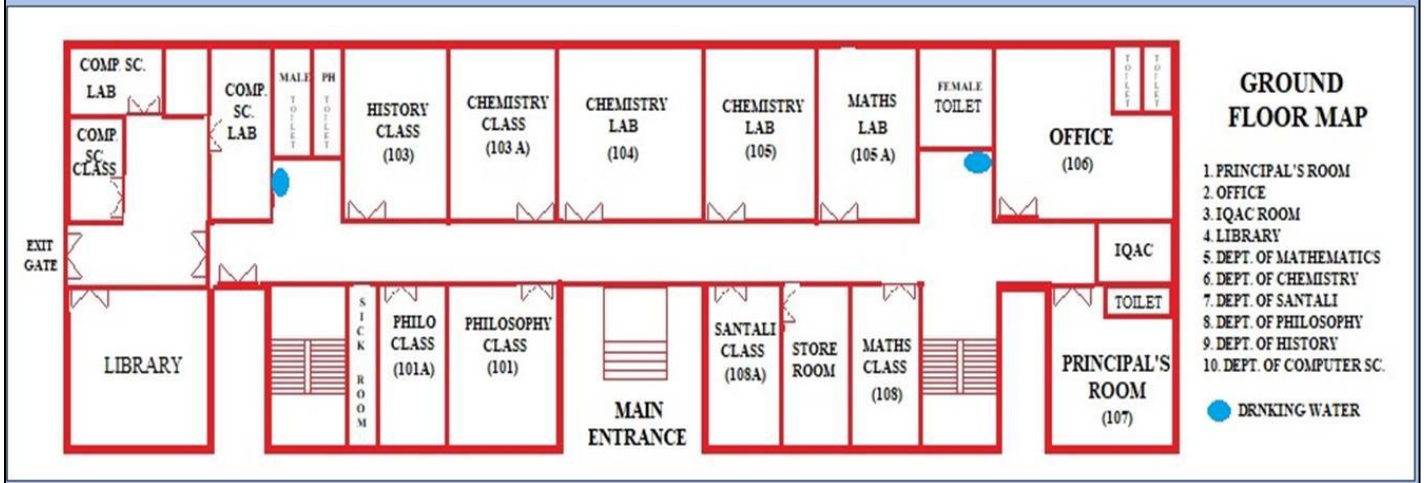
Results

There are three houses- the main building, other house, a water house with a security guard or watchman house, one canteen and two cycle stands.

Main building

The main building is four-storied. On the ground floor IQAC room, Principal room (including toilet), Staff room, and Philosophy classroom. Reading room (including Computer Science laboratory, classroom and teacher's room), Chemistry classroom and laboratory, Mathematics classroom and laboratory, Office, and Santal classroom with ladies' and gents' toilet were located. On the first floor, the Zoology classroom, Bengali departmental room and classroom, Botany laboratory and classroom, English classroom, Psychology classroom, Zoology classroom and laboratory, Seminar room, and Staff room (including toilet) including ladies' and gents' toilet were located. On the second floor Psychology classroom and laboratory, Physics black room, the department and laboratory, the Anthropology department and classroom, Sociology classroom including the ladies' toilet was located. There is also a classroom, staffroom, Finance Officer room, and Vice Chancellor room which are located under Rani Rashmoni Green University. On the third floor, the rooftop area was located. In this building a total of **3432** energy sources were found including various types of electronic devices (from fans to exhaust fan etc.) and a total of **134** water sources were observed including various sources like hand shower, tap etc. Generally, the main building was observed to be open at 10:30 AM and closes at 05:00 PM.

FLOOR MAP OF GOVERNMENT GENERAL DEGREE COLLEGE, SINGUR (MAIN BUILDING)



Other house

The other house is a two-storied construction. Here on the ground floor gents and ladies toilets were located. The roof area was located on the first floor. In this house, a total of 49 energy sources were found including various types of electronic devices (from LED bulb to exhaust fan etc.) and a total of 25 water sources were observed including various sources like flush commode, tap etc. Generally, it is not regularly used and mainly used for toilet purposes. It was used at the last polling time.

Water house

The water house is a one-story construction. Here on the ground floor no department or room was located. In this block, only 1 energy source was found including an exhaust fan and no water sources were observed. Generally, it is used for water storage purposes.

Security guard or watchman house

In this area total of 4 water sources were observed like taps, flush commode etc. A total of 19 energy sources were noticed including CFL tube light, filament bulb etc. This area is just a two-storied house (including a toilet) with a roof on the first floor.

Canteen house

It is a two-storied construction. On the ground floor kitchen, the Students Union room (including Girls Common room and toilet), Student's Union Office, and the Sanskrit classroom including the toilet were located. The roof area was located on the first floor. A total of 17 water sources were observed including sources like tap, water purifier, etc. A total of 228 energy sources were noticed including tube light, AC etc. It opens at 10:30 AM and closes at 04:45 PM generally. But the canteen was not found open after the covid situation.

Cycle Stand

There are two cycle stands where 5 energy sources in cycle stand I and 7 energy sources in the cycle stand II including filament bulb, ceiling fan etc. were observed. No water sources were observed there. It is mainly used for keeping cycles and bikes during college hours.

Campus area

Here a total of 12 energy sources were observed including LED bulbs. No water sources were observed yet.

3. RESULTS

WATER AUDIT:

BASIC INFORMATION:

YEAR IN WHICH FIRST WATER INITIATIVES WERE TAKEN	2013
SOURCES OF WATER SUPPLY	<ol style="list-style-type: none"> 1. ROOF TOP WATER TANKS THAT DRAW WATER THROUGH BORING WELLS 2. TWO PERENNIAL WATER BODIES
YEAR OF INTALLATION OF WATER TANKS	2015
NUMBER OF WATER TANKS IN COLLEGE	12 [2500 LITRES(x7)+1000 LITRES (x5)]
LOCATION OF WATER TANKS	Roof top
TYPES OF MOTOR USED IN TANK	1 Hz + 2Hz + 2 Hz
NUMBERS OF USED MOTORS FOR TANK	3
NUMBER OF TIMES THE TANKS ARE FILLED IN A DAY	Once
AMOUNT OF TIME REQUIRED TO FILL THE TANKS	1 hour
TOTAL AMOUNT OF WATER DRAWN PER DAY (litres)	42000
ARE THERE ANY LEAKAGES OBSERVED THAT REQUIRES REPAIRING	One in Girls Common Room
IF YES, RATE OF WATER LEAKAGE AND APPROXIMATE WATER LOSS IN A DAY	10 drop/ 15 secs

WATER QUALITY:

ANY RECENT MEASUREMENT OF WATER QUALITY PARAMETERS (IF SO, PARAMETERS: PH, EC, TDS ETC.):	nil
WHETHER THERE IS ANY WATER FILTER WITH RO, AQUA GUARD AND/OR LARGE WATER FILTER WITH COOLER (NUMBER/ CAPACITY/ LOCATION)	Three water filters: one on first floor, one on second floor and one in canteen
ANY OTHER INFORMATION REGARDING WATER QUALITY AND AVAILABILITY OF YOUR LOCALITY	Water quality of Singur is relatively good and all areas have adequate drinking water

RAIN WATER HARVESTING AND WATER RECYCLING:

ANY PROVISION DEVELOPED FOR REUSE AND RECYCLING OF WATER:	Yes, there is a Rain Water Harvesting Unit, a project in collaboration with Hooghly Zilla Parishad.
UTILIZATION OF HARVESTED RAINWATER	The main objective of this project is to increase the ground water reserve and reduce salinity in the ground water through dilution. These downspouts are channelized to lead the collected rain water up to a filter bed. The rain water is filtered and recharged to the nearest aquifer thereafter through a newly constructed bore well. S

SOURCES AND DISPOSAL OF WASTE WATER:

MAIN SOURCES OF WASTE WATER	1. SANITARY SEWAGE 2. LABORATORIES
WHETHER THERE IS SUFFICIENT/ADEQUATE DRAINAGE SYSTEM:	Yes
WHETHER WASTE WATER MIXES WITH GROUND WATER (IF YES, ANY MEASURES TAKEN?)	No, waste water do not mix with ground water
ANY EXISTING PROCESS OF WASTE WATER TREATMENT?	No
ANY REUSE OF WASTE WATER	Yes, the water from Air conditioners is collected and used for experiments in Chemistry, Botany and Zoology Laboratories
WATER MANAGEMENT PLAN IN USE:	
WATER MANAGEMENT INITIATIVES	Nil
WATER SAVING TECHNIQUES FOLLOWED	All students are sensitized for water conservation and instructed to turn off taps properly after use
ARE THERE ANY SIGNS REMINDING PEOPLE TO TURN OFF THE WATER	Yes, boards are displayed near Drinking water outlets to remind students about water conservation.

Water source numbers in different houses

A total of 180 (and one in Rani Rashmoni Green University) water sources were observed in the main building and other house and with one canteen and with the security guard, or watchman room at Singur Government General Degree College.

According to the number of water sources from all mentioned houses, the largest amount of water sources was found in the main building (74.44%) followed by other house (13.89%) and the canteen house (09.44%).

According to all water source types by all mentioned points wise then the largest amount of

water source types was found for metal tap with basin (28.33%) followed by metal tap (15.56%) and three urinals (13.33%).

According to the number of water source types in different houses, the largest amount of water source types was observed: metal tap with basin (31.34%) followed by flush commode (12.69%) and metal tap (11.94%) in the main building. According to the number of water source types in different houses, the largest amount of water source types was observed: metal tap (28%) followed by urinal (24%) and metal tap with basin (20%) in other house. According to the number of water source types in different houses, then the largest amount of water source types was observed metal tap with basin and metal tap (23.53% each) followed by plastic tap (17.65%) and urinal and flush commode (11.76% each) in canteen house. In the security guard house, all water source types (flush commode, metal shower, metal tap and plastic tap) were the same (25% each).

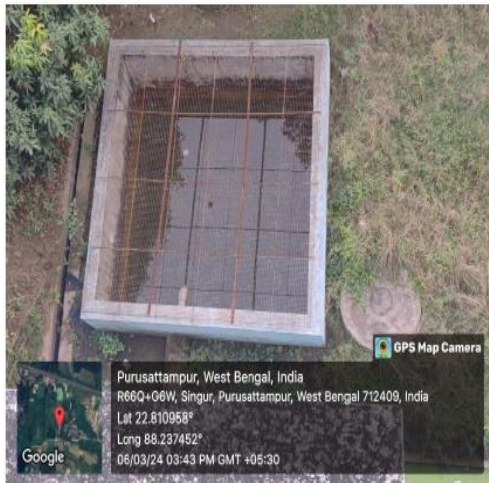
Site wise different types of water source types in numbers

The water sources were found highest in number in the main building. According to water source types on different floors of the main building, then on the ground floor, the largest amount of water source types was metal tap with basin (23.76%) followed by metal tap (19.80%) and flush commode (12.87%). According to water source types on different floors of the main building, then on the 1st floor, the largest amount of water source types was metal tap with basin (39.13%) followed by flush commode (15.22%) and urinal (13.04%). According to water source types on a different floor of the main building, then on the 2nd floor, the largest amount of water source types were metal tap with basin (31.03%) followed by metal tap and urinal (17.24% each) and flush commode (13.79%). On the 3rd floor of the main building, only four water sources were observed. According to all floors in the main building, the largest amount of water source types were highest for the ground floor (56.11%) followed by the 1st floor (25.56%) and 2nd floor (16.11%).

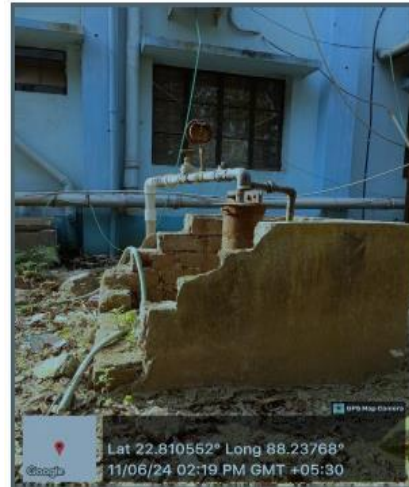
According to water source types in different sites, the largest amount of water source types were found in the toilet (68.33%) followed by the laboratory (13.33%) and corridor (05.56%).

According to the number of water source types in different mentioned sites, the largest amount of water source types was observed for metal tap with basin (21.95%) followed by metal tap (20.33%) and urinal (19.51%) in the toilet. According to the number of water source types in

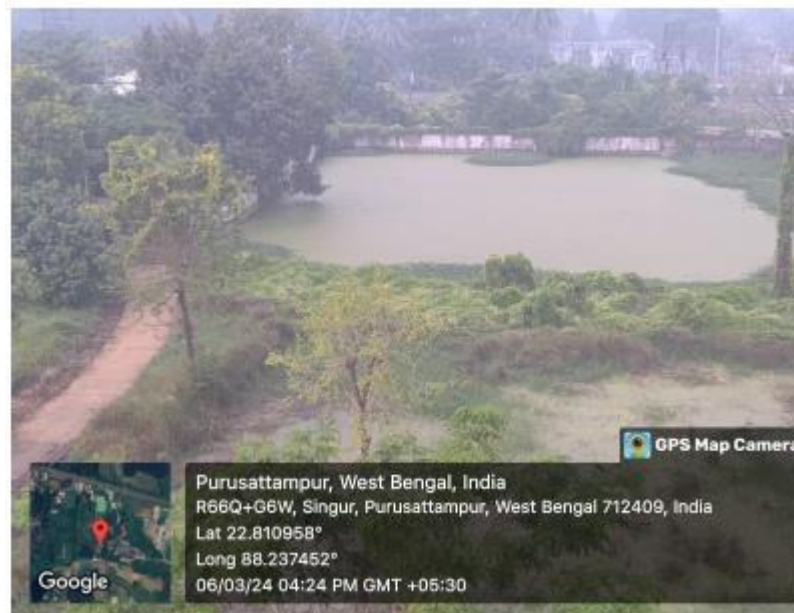
different houses, the largest amount of water source types was observed for metal tap with basin (41.67%) followed by basin with two metal taps (33.33%) and basin with three metal taps (12.50%) in the laboratory. According to the number of water source types in different houses, the largest amount of water source types was observed for metal tap with basin (40%) followed by metal tap with plastic tap and water purifier (30% each) in the corridor.



RAIN WATER HARVESTING UNIT, GGDC SINGUR



BORING WELL, GGDC SINGUR



TWO PERENNIAL WATER BODIES OF GGDC SINGUR

Block	Room	Dept.	Floor	Site	Water source	No.	Material	Condition	Leakages	Overuse / Overflow	Remarks
Main Building	-	Principal Room	Ground	Toilet	Basin+ Tap	1	Steel Tap	Good	No	No	-
					Shower+ Tap	1	Steel Tap				
					Hand Shower	1	Plastic				
					Flush Commode	1	NA				
Main Building	-	-	Ground	Ladies Toilet	Basin+ Tap	3	Steel Taps	Good	No	No	-
					Tap	3	Steel Taps				
					Flush Commo de	2	NA				
					Indian Pan+Flush	1	NA				
Main Building	9 (B)	Staff Room	Ground	Room	Basin+Tap	2	Steel Taps	Good	No	No	-
Main Building	101	Philosophy	Ground	Classroom	-	-	-	-	-	-	-
Main Building	101 (A)	Philosophy	Ground	Classroom	-	-	-	-	-	-	-
Main Building	102	Library	Ground	Reading room	-	-	-	-	-	-	-
		Computer Science		Classroom							
Main Building	103	History	Ground	Classroom	-	-	-	-	-	-	-
Main Building	104 A	Chemistry	Ground	Laboratory	Basin+Tap	2	Steel Taps	Good	No	No	There are 4 basins
					Basin+ 2 Taps	8	Steel Taps	Good	Yes, 1 tap @ 1 drop / minute	No	
Main Building	105	Chemistry	Ground	Laboratory + Classroom	Basin+Tap	1	Steel Tap	Good	No	No	-

Block	Room	Dept.	Floor	Site	Water source	No.	Material	Condition	Leakages	Overuse / Overflow	Remarks
Main Building	105 (A)	Mathematics	Ground	Laboratory	-	-	-	-	-	-	-
Main Building	106	Office	Ground	Room	Basin+Tap	1	Steel Tap	Good	No	-	-
				Gents Toilet	Tap	2	Steel Taps	Good	No	-	
					Shower	1	Steel				
					Flush Commode	1	-				
					Urinal+Tap	1	Steel Tap				
				Ladies Toilet	Tap	2	Steel Taps	Good	No	-	
					Flush Commode	1	-				
Shower	1	Steel									
Main Building	108	Mathematics	Ground	Classroom	-	-	-	-	-	-	-
Main Building	108 (A)	Santali	Ground	Classroom	-	-	-	-	-	-	-
Main Building	NA	NA	Ground	Gents Toilet	Basin+Tap	3	Steel Taps	Good	-	-	-
					Urinal	5	-				
					Indian Pan + Flush + Tap	1	Plastic Tap				
					Flush Commode	1	-				
					Tap	1	Plastic Tap				
Main Building	NA	NA	Ground	PH Toilet	Basin+Tap	1	Steel Tap	Good	-	-	-
					Tap	1	Steel Tap				
					Flush Commode	1	-				
Main Building	NA	NA	Ground	Corridor	Tap	3	Steel Taps, Plastic Tap	Cap leaking @ 30 drops/ 30 second	Yes		Outside Gents Toilet
					Water Purifier	1		Good	-		
					Basin+Tap	1	Steel Tap	Good	-		

Block	Room	Dept.	Floor	Site	Water source	No	Material	Condition	Leakages	Overuse / Overflow	Remarks
Main Building	NA	NA	First floor	Ladies Toilet (Staff)	Basin+Tap	2	Steel taps	Good	No	No	-
					Flush Commode	2					
					Tap	3	Steel Taps				
Main Building	201	Zoology	First floor	Class room	Water Purifier	1	-	Bad	NO	Yes	Not working
Main Building	201 (A)	Bengali	First floor	Class room	-	-	-	-	-	-	-
Main Building	202	Botany	First floor	Laboratory + Class room	Basin+ Tap	1	Steel Tap	Good	No	No	-
Main Building	202 (A)	English	First floor	Class room	-	-	-	-	-	-	-
Main Building	204	Political Science	First floor	Class room	-	-	-	-	-	-	-
Main Building	205	Botany	First floor	Laboratory	Basin+Tap	2	Steel Tap	Good	No	No	-
					Basin+3 Taps	3	Steel Tap				
Main Building	205 (A)	Botany	First floor	Laboratory	Basin+Tap	2	Steel Tap	Good	No	No	-
Main Building	206 (A)	Bengali	First floor	Departmental room	-	-	-	-	-	-	-
Main Building	207	-	First floor	Staff Room Ladies Toilet	Basin+Tap	1	Steel Tap	Good	No	No	-
					Flush Commode	1	-				
					Hand Shower	1	-				
Main Building	208	Zoology	First floor	Laboratory	Basin+Tap	4	Steel Tap	Good	No	No	-
					Water Purifier	1	-				
Main Building	209 (A+B)	Zoology	First floor	Classroom	-	-	-	-	-	-	-
Main Building	-	-	First floor	Seminar Room	-	-	-	-	-	-	-

Block	Room	Dept.	Floor	Site	Water source	No	Material	Condition	Leakages	Overuse / Overflow	Remarks
Main Building	-	-	First Floor	Staff Toilet (Gents)	Basin+Tap	1	Steel Tap	Good	No	No	-
					Flush Commode	2	-				
					Urinal	1	-				
					Hand Shower	1	-				
					Basin+Tap	3	Steel Tap				
Main Building	-	-	First Floor	Gents Student's Toilet	Basin+Tap	3	Steel Tap	Good	No	No	-
					Urinal	5	-				
					Flush Commode	2	-				
					Tap	2	Steel Tap				
Main Building	-	-	First Floor	Corridor	Water Purifier	1	-	Bad	-	Yes	Not Working
					Basin+Tap	1	Steel Tap	Good	No	No	-
Main Building	301	Bengali	Second Floor	Classroom	-	-	-	-	-	-	-
Main Building	302	Psychology	Second Floor	Classroom	-	-	-	-	-	-	-
Main Building	302 A	Psychology	Second Floor	Laboratory	-	-	-	-	-	-	-
Main Building	305	Physics	Second Floor	Black Room	-	-	-	-	-	-	-
Main Building	306	English	Second Floor	Classroom	Basin+Tap	1	Steel Tap	Good	No	No	-
Main Building	306 A	Sociology	Second Floor	Classroom	Basin+Tap	1	Steel Tap	Good	No	No	-

Block	Room	Dept.	Floor	Site	Water source	No	Material	Condition	Leakages	Overuse / Overflow	Remarks
Main Building	307	Sociology	Second Floor	Classroom	-	-	-	-	-	-	-
Main Building	308	Physics	Second Floor	Laboratory	Basin+2Taps	1	Steel Tap, Plastic Tap	Good	No	No	-
Main Building	309	Physics	Second Floor	Department	Basin+2 Taps	1	Steel Tap, Plastic Tap	Good	No	No	-
Main Building	310	Anthropology	Second Floor	Department	-	-	-	-	-	-	-
Main Building	311	Anthropology	Second Floor	Classroom	-	-	-	-	-	-	-
Main Building	312	Anthropology	Second Floor	Department	-	-	-	-	-	-	-
Main Building	-	-	Second Floor	Ladies Student's Toilet	Tap	3	Steel Taps	Good	No	No	-
					Flush Commode	1	-				
					Basin+Tap	3	Steel Taps				
Main Building	-	-	Second Floor	Gents Toilet	Basin+Tap	2	Steel Taps	Good	No	No	-
					Basin+Tap	1	Plastic Tap				
					Urinal	5	-				
					Flush Commode	2	-				
					Tap	2	Steel Taps				
					Hand Shower	1	Steel				
Main Building	-	-	Second Floor	Corridor	Water Purifier	1	-	Good	No	No	Outside Gents Toilet
					Basin+Tap	1	Steel Taps	Good			
					Basin+Tap	1	Steel Taps	Good			

Block	Room	Dept.	Floor	Site	Water source	No	Material	Condition	Leakages	Overuse / Overflow	Remarks
Main Building		Rani Rashmoni Green University	Second Floor	Staff Room	Basin+Tap	1	Steel Tap	Good	No	No	-
Main Building	-	-	Third Floor	Roof	Tap	4	Plastic Taps	Good	No	No	-

Summary: In the Main building one hundred and thirty-five water sources in number

In the Other house twenty-five water sources in number

Water source	Block	Room	Department	Floor	Sites	No.	Material	Condition	Leakages	Overuse / Overflow	Remarks																																																																								
Tap	Other house	-	-	Ground	Outside	3	Steel Taps	Good	No	No	It was used in last Election Voting time																																																																								
Basin+Tap						1	Steel Tap					Urinal	Other house	-	-	Ground	Gents Toilet	6	-	Good	No	No	It was used in last Election Voting time	Basin+Tap	2	Steel Taps	Flush Commode	1	-	Hand Shower	1	-	Tap	1	Steel Tap	Basin+Tap	2	Steel Taps	Flush Commode	Other house	-	-	Ground	Ladies Toilet	2	-	Good	No	No	It was used in last Election Voting time	Tap	3	Steel Taps	Hand Shower	2	-	Shower	1	-	-	1	-	-	Other house	-	-	1st	Roof	-	-	-	-	-	It was used in last Election Voting time									
Urinal	Other house	-	-	Ground	Gents Toilet	6	-	Good	No	No	It was used in last Election Voting time																																																																								
Basin+Tap						2	Steel Taps					Flush Commode						1	-					Hand Shower	1	-	Tap	1	Steel Tap	Basin+Tap	2	Steel Taps	Flush Commode	Other house	-	-	Ground	Ladies Toilet	2						-	Good					No	No	It was used in last Election Voting time	Tap	3	Steel Taps	Hand Shower	2	-	Shower	1	-	-	1	-	-	Other house	-	-	1st	Roof	-	-	-	-	-	It was used in last Election Voting time						
Flush Commode						1	-					Hand Shower						1	-					Tap	1	Steel Tap	Basin+Tap	2	Steel Taps	Flush Commode	Other house	-	-						Ground						Ladies Toilet									2	-	Good	No	No	It was used in last Election Voting time	Tap	3	Steel Taps	Hand Shower	2	-	Shower	1	-	-	1	-	-	Other house	-	-	1st	Roof	-	-	-	-	-	It was used in last Election Voting time
Hand Shower						1	-					Tap						1	Steel Tap					Basin+Tap	2	Steel Taps	Flush Commode	Other house	-	-																								Ground	Ladies Toilet					2	-	Good	No	No	It was used in last Election Voting time	Tap	3	Steel Taps	Hand Shower	2	-	Shower	1	-	-	1	-	-	Other house	-	-	1st	Roof
Tap						1	Steel Tap					Basin+Tap						2	Steel Taps					Flush Commode	Other house	-	-													Ground	Ladies Toilet	2	-	Good			No	No	It was used in last Election Voting time	Tap										3	Steel Taps					Hand Shower	2	-	Shower	1	-	-	1	-	-	Other house	-	-	1st	Roof	-	-	-
Basin+Tap						2	Steel Taps					Flush Commode	Other house	-	-	Ground	Ladies Toilet	2	-	Good	No	No	It was used in last Election Voting time	Tap																		3	Steel Taps							Hand Shower										2	-					Shower	1	-	-	1	-	-	Other house	-	-	1st	Roof	-	-	-	-	-	It was used in last Election Voting time
Flush Commode	Other house	-	-	Ground	Ladies Toilet	2	-	Good	No	No	It was used in last Election Voting time																																																																								
Tap						3	Steel Taps					Hand Shower						2	-					Shower							1	-	-	1	-	-	Other house	-	-			1st	Roof		-	-				-	-	-	It was used in last Election Voting time																														
Hand Shower						2	-					Shower						1	-					-				1	-	-	Other house	-	-	1st	Roof	-	-	-	-			-	It was used in last Election Voting time																																								
Shower						1	-					-						1	-					-	Other house	-	-	1st	Roof	-	-	-	-	-	It was used in last Election Voting time																																																
-						1	-					-	Other house	-	-	1st	Roof	-	-	-	-	-	It was used in last Election Voting time																																																												
-	Other house	-	-	1st	Roof	-	-	-	-	-	It was used in last Election Voting time																																																																								

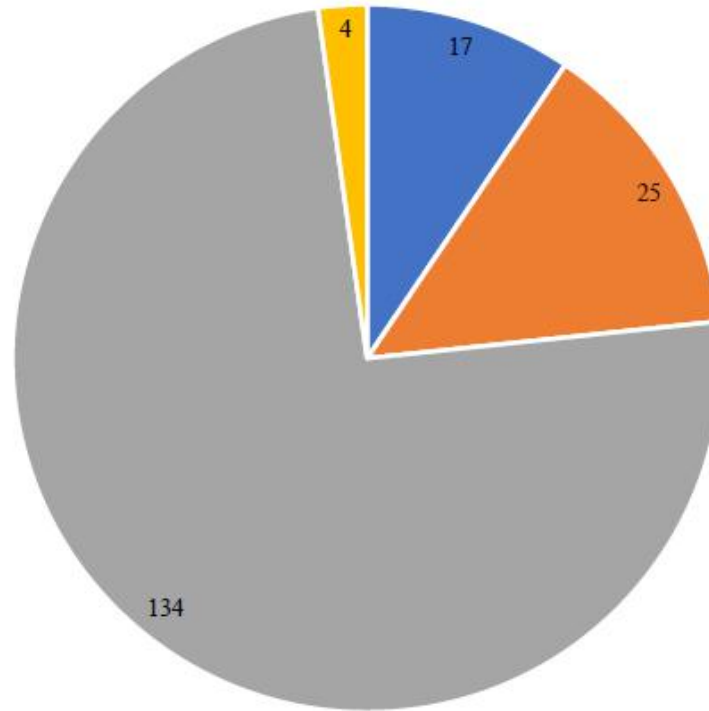
In the Security Guard house four water sources in number

Water source	Block	Room	Department	Floor	Sites	No.	Material	Condition	Leakages	Overuse / Overflow																	
-	Security Guard house	-	-	Ground	Room	-	-	-	-	-																	
Flush Commode	Security Guard house	-	-	Ground	Toilet	1	-	Good	No	No																	
Tap						1	Steel Tap				Tap	1	Plastic Tap	Shower	1	Steel	-	Security Guard house	-	-	1st	Roof	-	-	-	-	-
Tap						1	Plastic Tap				Shower	1	Steel	-	Security Guard house	-	-	1st	Roof	-	-	-	-	-			
Shower						1	Steel				-	Security Guard house	-	-	1st	Roof	-	-	-	-	-						
-	Security Guard house	-	-	1st	Roof	-	-	-	-	-																	

In the Canteen house seventeen water sources in number

Water source	Block	Room	Department	Floor	Sites	No.	Material	Condition	Average usage time	Leakages	Overuse / Overflow
Basin+Tap	Canteen house	-	-	Ground	Canteen Kitchen	2	Steel Taps	Good	-	No	No
Tap						2	Plastic Taps				
Basin+Tap	Canteen house	-	-	Ground	Students Union Room+Girls Common Room Toilet	1	Steel Tap	Good	10:30 AM-04:45 PM	No	No
Tap						3	Steel Taps				
Tap						1	Plastic Tap				
Flush Commode						1					
Shower						1					
Water Purifier						1					
						1					
	Canteen house	-	-	Ground	Students Union Office	-	-	-	10:30 AM-04:45 PM	-	-
	Canteen house	-	Sanskrit	Ground	Classroom	-	-	-	10:30 AM-04:45 PM	-	-
	Canteen house	-	Sanskrit	Ground	Classroom	-	-	-	10:30 AM-04:45 PM	-	-
Flush Commode	Canteen house	-	-	Ground	Toilet	1	-	Good	10:30 AM-04:45 PM	No	No
Tap						1	Steel Tap				
Basin+Tap						1	Steel Tap				
Urinal						2	-				
	Canteen house	-	-	Ground	Corridor	-	-	-	10:30 AM-04:45 PM	-	-
	Canteen house	-	-	1st	Roof	-	-	-	10:30 AM-04:45 PM	-	-
						17					

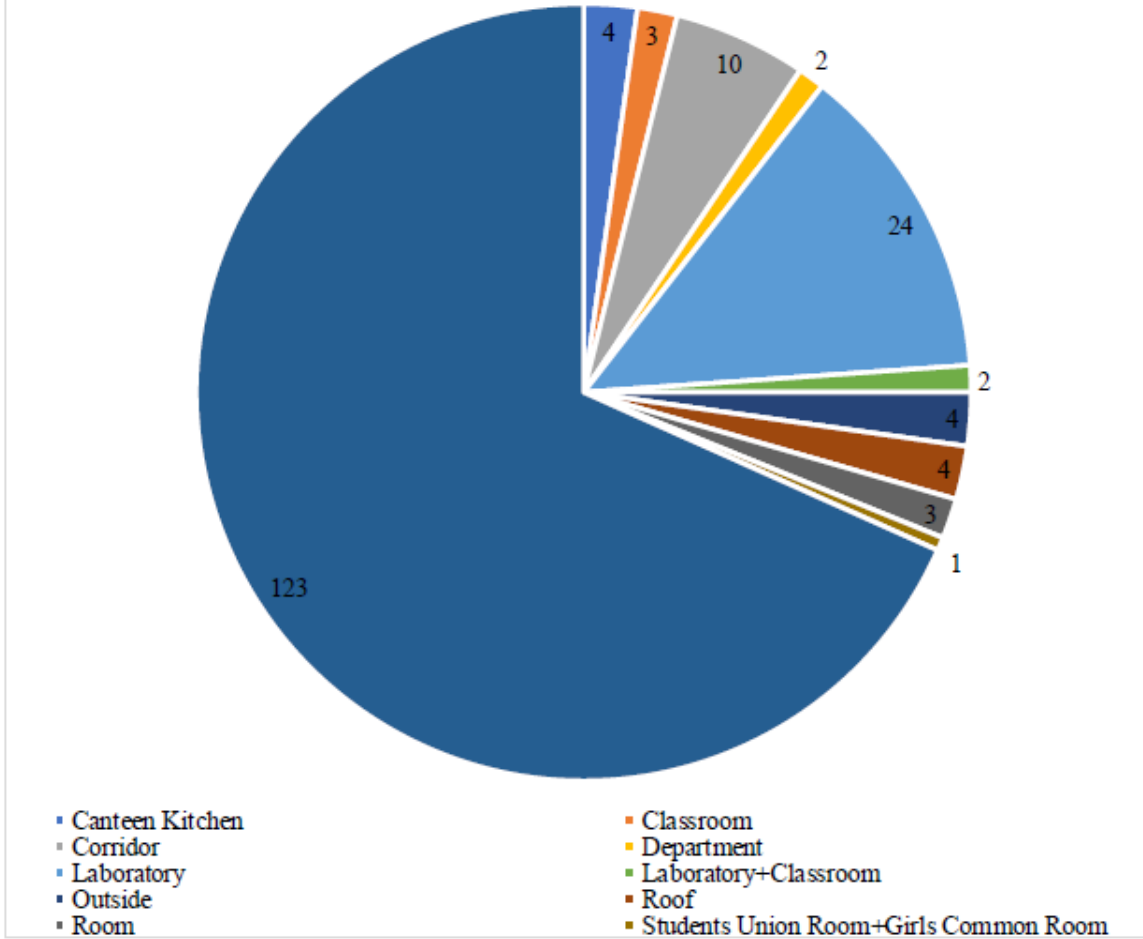
Overall water sources in different houses



▪ Canteen house ▪ Other house ▪ Main Building ▪ Security Guard house

Water source numbers in different houses

Overall water sources in different sites



Water source numbers in mentioned all sites

Recommendations for future water utilization:

- Rainwater can be stored and harvested with proper setup for gardening, washrooms, and other non-drinkable purposes of the institution.
- Grey water from toilets, canteen and wastewater from different laboratories can be treated and used further for gardening and other external uses.
- Damaged or licked taps should be replaced by thermal sensitive taps/ press taps to control the wastage of water in the basin and other regular usable sources.

Energy Audit
Of
Government General Degree College Singur
Jalaghata, Singur 712409
For the Year 2023-24

By

Department of Environmental Science
Rani Rashmoni Green University
Jalaghata Singur

Energy Utilization questionnaire

History & earlier maintenance:

1. In _____ year the first energy initiatives were taken in college?

2. What were the sources of using energy at that time?

Inputs:

3. The installation of meters is governed under which administration?

a. College Governing body b. Others _____

4. Are there any changes/replacements in the meter system that happened in a particular part of the college?

a. Yes b. No c. Don't know

5. If it is yes, where are the changes noticed?

a. Whole College b. Department () c. Laboratory ()

d. Canteen e. Hostel f. Quarter c. Others _____

6. Which type of changes is observed?

Recent background:

7. Does your college use firewood?

a. Yes b. No

8. If yes, the weight of firewood used per month and the amount of money spent?

9. Does your college use petrol/diesel/ others for generators?

a. Yes b. No

10. If yes, what amount of petrol/diesel/ others used per month and the amount of money spent?

11. Are there any energy-saving methods employed in your college?

a. Yes b. No

12. If yes, please specify. If not, suggest some. _____

13. Are any alternative energy sources/nonconventional energy sources employed/installed in your college? (Photovoltaic cells for solar energy, windmill, energy-efficient stoves, etc.,) Specify.

14. If yes, mention the year of employment/installation in your college with units? (Photovoltaic cells for solar energy, windmill, energy-efficient stoves, etc.,) Specify.

15. If not, do you have any future plans?

a. Yes b. No c. Don't know

16. If yes, tell details about it _____

17. Do you run "switch off" drills at college?

a. Yes b. No

18. Are your computers and other equipment put in power-saving mode?

a. Yes b. No

19. Does your machinery (TV, AC, Computer, weighing balance, printers, etc.) run on standby mode most of the time?

a. Yes b. No

IQSE ROOM	LED LIGHT	1	12	2	30	0.72
IQSE ROOM	STAND FAN	1	175	1	20	3.5
COLLEGE OFFICE	LIGHT	16	3	5	170	40.8
COLLEGE OFFICE	FAN	8	75	5	100	300
COLLEGE OFFICE	AC	2	1970	4	70	1103.2
COLLEGE OFFICE	COMPUTER	8	350	3	110	924
COLLEGE OFFICE	PRINTER	6	250	1	170	255
COLLEGE OFFICE	XEROX	2	960	0.5	80	76.8
COLLEGE OFFICE	EXHAUST FAN	2	35	5	170	59.5
COLLEGE OFFICE	TUBELIGHT	2	40	5	170	68
COLLEGE OFFICE	ELECTRIC CATTLE	1	750	0.5	170	63.75
GROND FLOOR(CORRIDOR)	TUBELIGHT	10	40	3	170	204
GROND FLOOR(CORRIDOR)	FAN	7	75	5	100	262.5
GROND FLOOR(CORRIDOR)	HALOGEN	1	100	2	10	2
CENTRAL LIBRARY	TUBELIGHT	12	40	5	170	408
CENTRAL LIBRARY	FAN	8	75	5	100	300
CENTRAL LIBRARY	AC	2	2595		1024UNIT/YEAR	
CENTRAL LIBRARY	COMPUTER	1	450	5	100	225
CENTRAL LIBRARY	LED LIGHT	3	40	5	170	102
CENTRAL LIBRARY	STAND FAN	1	125	5	100	62.5
CENTRAL LIBRARY	TV	1	80	2	50	8
COMPUTER SCIENCE	TUBELIGHT	12	40	5	170	408

COMPUTER SCIENCE	FAN	9	75	5	100	337.5
COMPUTER SCIENCE	PRINTER	1	350	0.5	70	12.25
COMPUTER SCIENCE	AC	1	1970	4	75	591
COMPUTER SCIENCE	WIFI ROUTER	1	15	5	170	12.75
COMPUTER SCIENCE	DIGITAL TRAINER	5	20	3	45	13.5
COMPUTER SCIENCE	COMPUTER	22	350	2	80	1232
MALE WASHROOM	AQUA GUARD	1	42	5	170	35.7
MALE WASHROOM	TUBEELIGHT	4	40	5	170	136
MALE WASHROOM	EXHAUST FAN	2	35	5	170	59.5
101/A	TUBELIGHT	8	40	5	170	272
101/A	FAN	3	75	5	100	112.5
101	TUBELIGHT	8	40	5	170	272
101	FAN	6	75	5	100	225
104A	TUBELIGHT	16	40	5	170	544
104A	FAN	9	75	5	100	337.5
104A	WEIGHT MACHINE	1	10	1	90	0.9
104A	DRY OVEN	1	1110	1	20	22.2
104A	UV MACHINE	1	450	0.5	70	15.75
104A	DISTILLED WATER FORMATION	1	750	5	90	337.5
104A	CENTRIFUGE	1	500	1	45	22.5
104A	COMPUTER	1	350	5	170	297.5
104A	PRINTER	1	350	0.5	50	8.75
104A	HEATING MANTLE	5	100	1	45	22.5
104A	STAND FAN	1	125	2	45	11.25
105	FAN	3	75	5	100	112.5
105	TUBELIGHT	8	40	5	170	272
105	WEIGHT MACHINE	2	10	0.5	90	0.9
105	EXHAUST FAN	1	35	5	170	29.75
105	COLORIMETER	2	10	0.5	20	0.2
105	CONDUCTIVITES METER	4	310	0.5	20	12.4
105	GAS OVEN	2		19KG/4 YEAR		
105A	FAN	3	75	5	100	112.5
105A	TUBELIGHT	8	40	5	170	272
105A	WALLFAN	2	55	2	45	9.9
105A	COMPUTER	2	450	2	100	180
105A	PRINTER	1	250	0.5	20	2.5
SANSKRIT CLASS	FAN	9	75	5	100	337.5
SANSKRIT CLASS	TUBELIGHT	13	40	5	170	442
103	TUBELIGHT	6	40	5	170	204
103	FAN	6	75	5	100	225
103A	TUBELIGHT	8	40	5	170	272
103A	FAN	3	75	5	100	112.5
103A	FRIDGE	2			169U/YEAR	

108	FAN	3	75	5	100	112.5
108	TUBELIGHT	8	40	5	170	272
108	TABLEFAN	2	55	5	45	24.75
108A	FAN	3	75	5	100	112.5
108A	TUBELIGHT	3	40	5	170	102
COMMON ROOM	FAN	2	75	4	100	60
COMMON ROOM	TUBELIGHT	3	40	5	170	102
COMMON ROOM	STAND FAN	2	175	4	100	140
COMMON ROOM	COMPUTER	1	450	1	60	27
COMMON ROOM	PRINTER	1	250	0.5	20	2.5
COMMON ROOM	LED LIGHT	1	9	5	170	7.65
COMMON ROOM	HOME THEATER	1	400	2	90	72
COMMON ROOM	AC	1	1870	4	75	561
GIRLS COMMON ROOM	EXHAUST FAN	1	35	5	170	29.75
GIRLS COMMON ROOM	FAN	2	75	5	100	75
GIRLS COMMON ROOM	TUBELIGHT	3	40	5	170	102
LADIES WASHROOM	TUBELIGHT	4	40	5	170	136
LADIES WASHROOM	EXHAUST FAN	2	35	5	170	59.5
CANTEEN	FAN	4	75	5	100	150
CANTEEN	TUBELIGHT	6	40	5	170	204
CANTEEN	FRIDGE	2			208U/YEAR	
CANTEEN	MIXERGRINDER	1	800	0.5	120	48
CANTEEN	GAS OVEN					0
ACTIVITY ROOM	FAN	10	75	5	100	375
ACTIVITY ROOM	TUBELIGHT	11	40	5	170	374
GARAGE	LIGHT	5	12	5	365	109.5
COLLEGE CAMPUS	STREET LIGHT	6	100	10	365	2190
COLLEGE CAMPUS	SUBMERSIBLE PUMP	3	1000	0.33	170	168.3
CANTEEN	GAS OVEN	1		1	120	0
total						
SEMINAR ROOM	AC	4	1970	2	20	315.2
	FAN	15	75	4	75	337.5
	TUBE LIGHT	16	40	4	90	230.4
	SPEAKER (S)	8	10	3	40	9.6
	SPEAKER (L)	2	15	3	40	3.6
	WIFI ROUTER	1	15	3	40	1.8
204	FAN(W)	1	125	5	100	62.5
	FAN (S)	2	75	5	100	75
	LIGHT	2	22	5	170	37.4

STUFF ROOM	AC	3	1970	4	60	1418.4
	FAN	8	75	5	85	255
	LIGHT	24	12	5	170	244.8
	AQUAGUARD	1	35	5	170	29.75
	FRIDGE	1		5	200KW	
	COMPUTER	3	350	5	170	892.5
	PRINTER	1	350	0.5	170	29.75
	MICRO WAVE	1	700	0.33	170	39.27
	LIGHT	4	40	5	170	136
	EXHAUST FAN	2	35	5	170	59.5
209	FAN	6	75	5	100	225
	LIGHT	10	22	5	170	187
	CELFROST	1	75	24	365	657
LADIES WASH ROOM	TUBE LIGHT	2	22	5	170	37.4
	EXHAUST FAN	1	35	5	170	29.75
201	LIGHT	8	22	5	170	149.6
	FAN	3	75	5	100	112.5
	SMART TV	1	65	4	30	7.8
201(A)	LIGHT	6	22	5	170	112.2
	FAN	6	75	5	100	225
	SMART TV	1	65	4	170	44.2
206(A)	LIGHT	16	22	5	170	299.2
	FAN	9	75	4	100	270
202	LIGHT	8	22	5	170	149.6
	FAN(W)	2	125	5	100	125
	FAN(S)	3	75	5	100	112.5
	SMART TV	1	65	4	170	44.2
205(A)	LIGHT	8	22	5	170	149.6
	FAN	3	75	5	100	112.5
	CENTIFUGE	1			160KW	
	FRIDGE	1	365			0
202(A)	LIGHT	8	22	5	170	149.6
	FAN	3	75	5	100	112.5
MALE WASH ROOM	LIGHT	4	40	5	170	136
	EXHAUST FAN	2	35	5	170	59.5
FLOOR	LIGHT	11	22	5	170	205.7
	FAN	10	75	5	100	375
	AQUAGUARD	1	42	5	170	35.7
	WIFI ROUTER	1	12	5	170	10.2
	CCTV	2	50	24	365	876
						0

	AUTOCLAVE	1		1	2KW	
208 ZOOLOGY LAB	LIGHT	10	22	5	170	187
	FAN	6	75	5	100	225
	REFRIGARATOR	1	225	24	170	918
	PRINTER	2	350	0.5	170	59.5
	EXHAUST FAN	4	35	6	170	142.8
	AQUIRIUM	1	30	24	170	122.4
	WEIGHT BALANCE	2	24	0.083	12	0.047808
	HITER	1	1500	0.083	45	5.6025
	WATER BATH	1	350	0.083	45	1.30725
205 BOTANY LAB	LIGHT	8	40	5	170	272
	FAN	3	75	5	100	112.5
	HOT AIR OVEN	1	1550	0.5	4	3.1
	INCUBATOR	1	850	0.5	4	1.7
	REFRIGARATOR	1	220	24	170	897.6
	HITER	1	1500	1	75	112.5
	COMPUTER	2	450	3	170	459
	WEIGHT BALANCE	2	24	0.16	90	0.6912
	PRINTER	1	750	0.5	170	63.75
						0
	LAMINAR AIR FLOW	1	950	0.75	4	2.85
SMART CLASS	AC	1	2100	4	60	504
	PROJECTOR	1	50	4	30	6
	DESKTOP	1	450	4	30	54
	LED LIGHT	4	22	5	170	74.8
	FAN	5	52	5	100	130
	16AMP SOCKET	4				0
	6AMP SOCKET	10				0
	PEDESTRAL FAN	1	160	3	100	48
302	TV (43INCH)	1	80	5	30	12
	FAN	3	52	5	100	78
	WALL FAN	2	110	5	100	110
	TUBE LIGHT	6	40	5	170	204
	16AMP SOCKET	2				0
	6AMP SOCKET	10				0
302A	16AMP SOCKET	7				0
	6AMP SOCKET	9				0
	WALL FAN	2	110	5	100	110
	DESKTOP	2	450	2	30	54

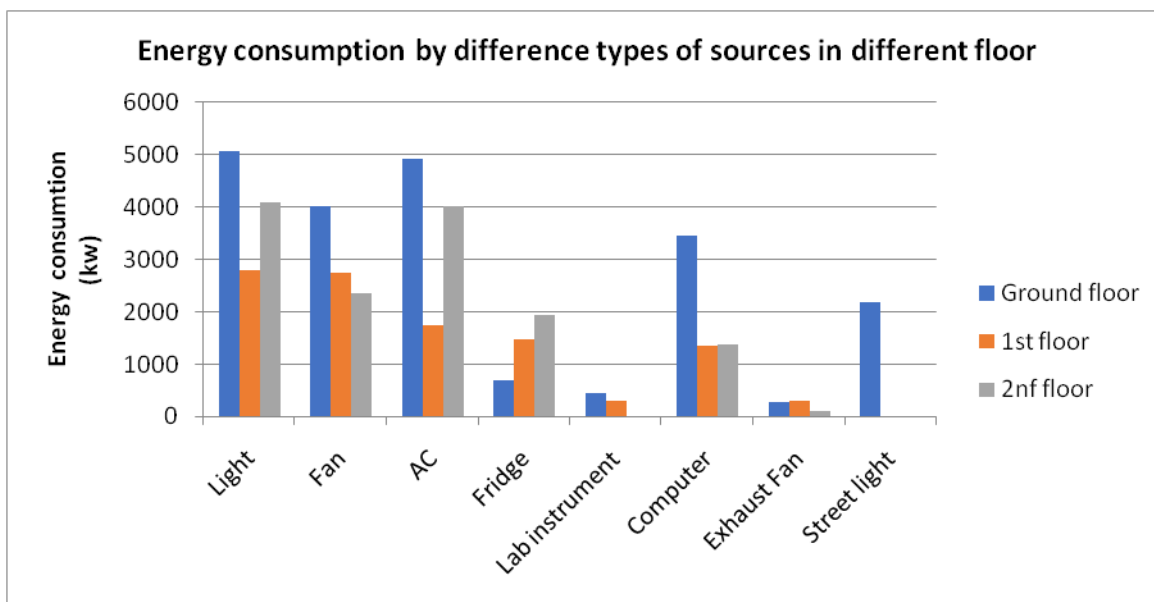
	PRINTER	1	745	2	30	44.7
	LED LIGHT	2	22	5	170	37.4
	TUBE LIGHT	8	40	5	170	272
	FAN	3	52	5	100	78
	AC	1	1970	5	60	591
301	TUBE LIGHT	16	40	5	170	544
	FAN	9	52	5	100	234
	16AMP SOCKET	3				0
	6AMP SOCKET	7				0
LADIES TOILET	TUBE LIGHT	4	40	5	170	136
	EXHAUST FAN	2	30	5	170	51
306	TUBE LIGHT	8	40	5	170	272
	FAN	3	52	5	100	78
	16AMP SOCKET	3				0
	6AMP SOCKET	8				0
306A	TUBE LIGHT	8	40	5	170	272
	FAN	3	52	5	100	78
	16AMP SOCKET	4				0
	6AMP SOCKET	6				0
307	TV(43INCH)	1	80	5	30	12
	FAN	6	52	5	100	156
	TUBE LIGHT	10	40	5	170	340
	16AMP SOCKET	10				0
	6AMP SOCKET	20				0
308	TUBE LIGHT	10	40	5	170	340
	FAN	6	52	5	100	156
	16AMP SOCKET	10				0
	6AMP SOCKET	21				0
309	FRIDGE	1	220	24	365	1927.2
	TUBE LIGHT	10	40	5	170	340
	FAN	6	52	5	100	156
	16AMP SOCKET	9				0
	6AMP SOCKET	16				0
	DESKTOP	4	450	3	30	162
	PRINTER	1	745	3	30	67.05
310	TV(43INCH)	1	80	5	50	20
	DESKTOP	1	450	3	30	40.5
	FAN	3	52	5	100	78
	TUBE LIGHT	8	40	5	170	272
	16AMP SOCKET					0
	6AMP SOCKET					0
312	TUBE LIGHT	10	40	5	170	340

	FAN	6	52	5	100	156
	DESKTOP	1	450	3	30	40.5
	PRINTER	1	745	3	30	67.05
	16AMP SOCKET	4				0
	6AMP SOCKET	11				0
COMMON AREA	FAN	14	52	5	50	182
	LED LIGHT	17	22	5	50	93.5
	16AMP SOCKET	2				0
	6AMP SOCKET	19				0
GENTS TOILET	TUBE LIGHT	4	40	5	170	136
	EXHAUST FAN	2	30	5	170	51
DARK ROOM	AC	1	2100	4	80	672
	TUBE LIGHT	8	40	1	170	54.4
	FAN	3	52	5	100	78
	16AMP SOCKET	5				0
	6AMP SOCKET	7				0
RRGU OFFICE	LED LAMP	4	22	5	170	74.8
	WALL FAN	6	110	5	100	330
	CCTV	4	12	24	365	420.48
	CCTV(MODEM)	1	26	24	365	227.76
	6AMP SOCKET	3				0
VC SIR'S OFFICE	LED LAMP	20	3	5	170	51
	WALL FAN	2	110	5	100	110
	DESKTOP	7	450	3	100	945
	PRINTER	4	745	0.5	75	111.75
	ROUTER	1	15	24	365	131.4
	MONITOR	1	30	5	170	25.5
	16AMP SOCKET	16	1970			0
	6AMP SOCKET	22	900			0
	AC	3	1970	4	70	1654.8
	WATER PURIFIER	1	16	2	170	5.44
	TUBE LIGHT	3	40	5	170	102
	ELECTRIC KETTLE	1	1350	0.5	170	114.75
CLASS ROOM	AC	2	1970	4	70	1103.2
	FAN	6	52	5	100	156
	LED LIGHT	7	22	5	170	130.9
	16AMP SOCKET	4				0
	6AMP SOCKET	9				0
	TV(43INCH)	1	80	2	120	19.2
	DESKTOP	1	450	2	120	108
TOTAL						50683.43
Annex						3097

Analysis of Different Energy Sources

A total of 1033 energy sources were observed in the premises including three floors of main building, annex building, ground, and the security guard room at Singur Government General Degree College. For analysis the premises has been distributed into five regions – Ground floor of main building, 1st floor of main building, 2nd floor of main building, Annex building (which includes canteen, activity rooms, Sanskrit department, and girls’ common room) and outdoor of campus (which includes playground, streets, and guards’ room).

Types of energy sources	Ground floor	1st floor	2nf floor	Total energy consumption
Light	5070.1	2796	4086.8	11952.9
Fan	4017.5	2737.5	2344	9099
AC	4914.84	1733.4	4021	10669.24
Fridge	687	1462.6	1927.2	4076.8
Lab instrument	433.95	289.8	0	723.75
Computer	3452.5	1351.5	1363.5	6167.5
Exhaust Fan	267.75	291.55	102	661.3
Street light	2190	0	0	2190



Analysis of Energy Consumption

Energy consumption was analyzed across five distinct regions within the Singur Government General Degree College:

- * Ground Floor of Main Building: 17140.185 Units
- * 1st Floor of Main Building: 12775.57 Units
- * 2nd Floor of Main Building: 18299.88 Units
- * Annex Building: (This includes the canteen, activity rooms, Sanskrit department, and girls' common room.)
- * Outdoor Campus: (Encompassing the playground, surrounding streets, and the guards' room.)

A total of 1033 energy sources were identified across these regions.

No of energy Source	Energy consumption(kw)
Ground floor	17140
1st floor	12775
2nd floor	18300
outdoor	2468
Annex	3097
TOTAL	53780

* Main Building: Dominates with 91% of all sources (33% Ground Floor, 24% 1st Floor, 34% 2nd Floor).

* Annex Building: Accounts for 5% of sources.

* Outdoor: Represents 4% of sources.

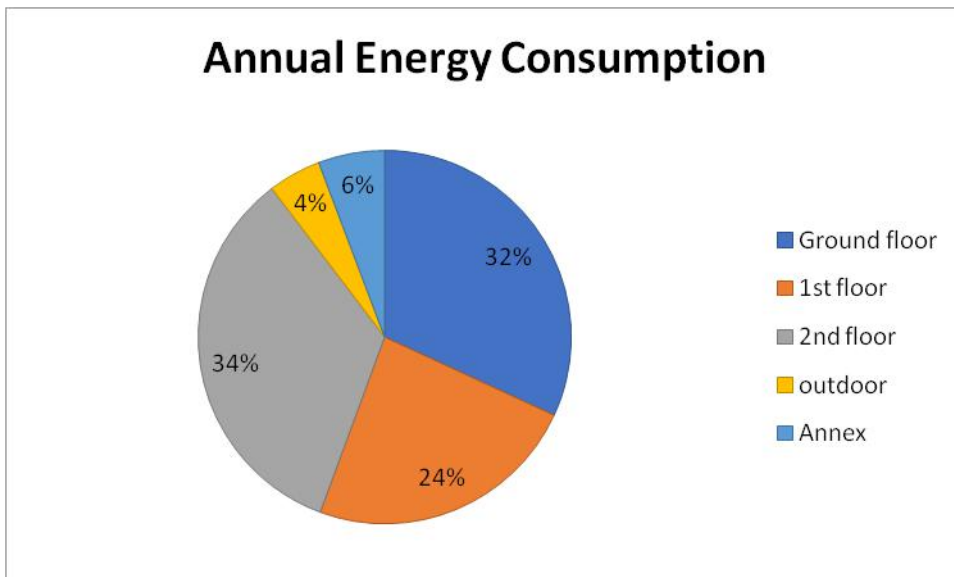
Energy Source Types:

* 55 unique energy sources categorized into 10 subgroups.

* Tube lights (39%) and Fans (27%) are the most prevalent.

* Moderate sources: Lab Instruments (6%), LED/CFL (5%), Computers (5%), and annex 6%.

* Minor but high-consumption sources: AC, Exhaust fan, Street Lights, Fridges, and "Others."

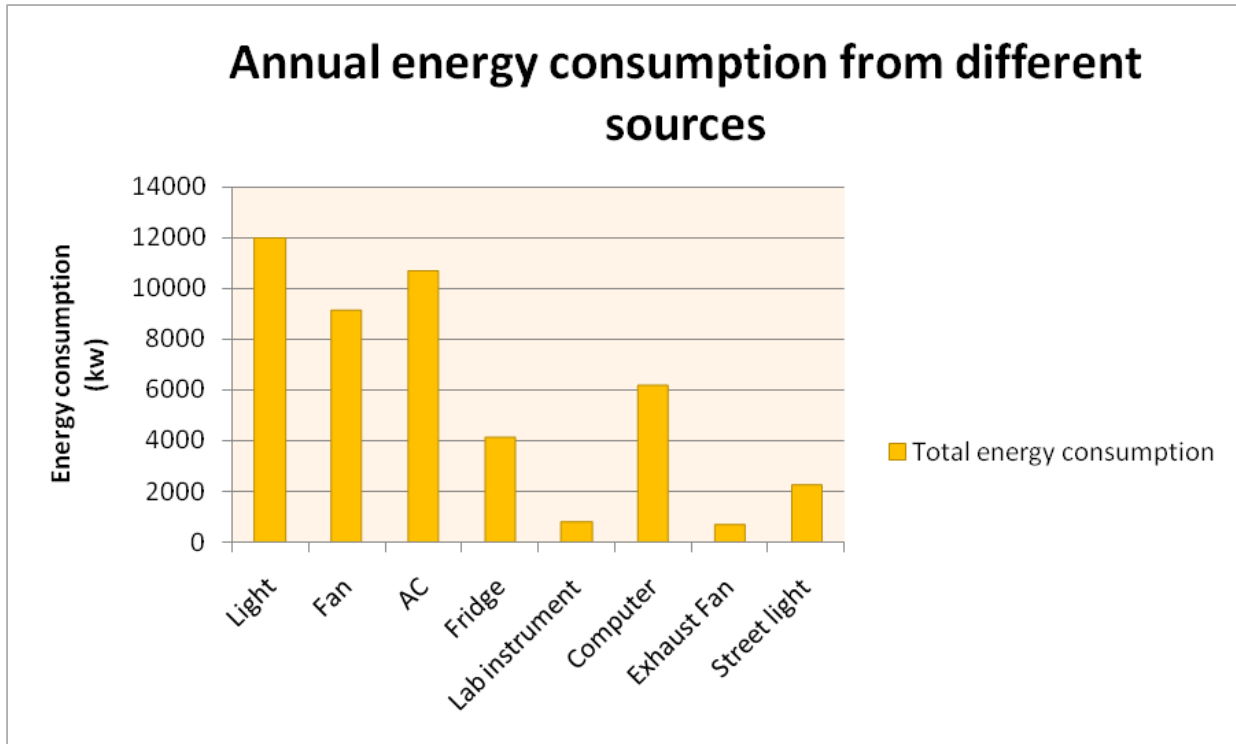


55 unique energy sources categorized into 10 subgroups.

Tube lights (39%) and Fans (27%) are the most prevalent.

Moderate sources: Lab Instruments (6%), LED/CFL (5%), Computers (5%), Exhaust fan (2%) and annex (6%).

Minor but high-consumption sources: AC, Street Lights, Fridges, and "Others."



Meter Reading on February 2023	Meter Reading on February 2024	Actual Annual Energy Consumption	Estimated Annual Energy Consumption	Actual Annual Energy Consumption of last year
323732	354980	31248	50683	40362

In the end, this audit compares the estimated annual energy consumption from gathered data with the actual energy consumption of last year as reflected from the electricity bill. It is evident from the comparison that the actual energy consumption is **38.34%** less than the estimated value. The actual energy consumption has also decreased by 23% compared to previous year. It clearly indicates the actual duration of active hours are less than given estimated values, which may be interpreted as the users of the energy sources i.e. the students, teachers, and office staffs have adapted good practices like 'switch off drill' to minimize the energy consumption.

Energy Production of Solar Photo-Voltaic Cells

The institution consumes an average of 110.6 units of electricity daily. It has a 10 kW rooftop solar panel, which could theoretically meet the entire energy demand if it operates at full capacity for 11 hours daily and energy produce by Solar Photo-Voltaic cells is 7.705 kw yearly. However, factors like weather, sunlight intensity, and system efficiency will reduce actual output. A specialized meter from WBSUEDCL is needed to accurately measure the solar panel's energy production and determine the actual cost savings. This meter will enable the institution to track both energy consumption from the grid and energy fed back into the grid by the solar panel.

Conclusions:

- * Most Numerous: Tube lights are the most numerous energy sources within the institution.
- * Highest Consumption: Fans consume the most energy, followed by street lights.
- * Main Building Focus: The majority of energy sources are located within the main building.
- * Effective Energy Conservation: Actual energy consumption is lower than estimated, indicating successful implementation of energy-saving practices.
- * Solar Energy Potential: The 10 kW solar panel presents the potential for the institution to become self-sufficient in energy production (produce 7.705kw).

Suggestions:

- * Upgrade Tube lights: Replace damaged tube lights with energy-efficient LEDs to significantly reduce energy consumption.
- * Solarize Streetlights: Replace conventional streetlights with solar-powered alternatives, potentially reducing energy consumption by 19%.
- * Install Net Metering: Install a specialized meter for the solar panel to accurately track energy production and optimize electricity cost savings.

These conclusions and suggestions provide a concise summary of the key findings and recommendations from the energy audit.

Suggestions:

- As tube lights are the major energy sources, in future replacing the damaged tube lights by LED lights can reduce the overall energy consumption.
- Replacing the conventional street lights by solar street lights can reduce the energy consumption by 19%.
- Installation of new meter suitable for on-grid solar panel can decrease the financial cost due to electricity on the institution.

Biodiversity Audit:

After Green Campus Management questionnaire, it was found that herbarium sheets of old plants are stored and the inventory had been maintained by the Botany department since 2015 which are- *Anisomeles indica* of Lamiaceae family; *Urena lobata* [local name- Jongli ghagra], *Sida cordata* [local name- Kesuth], *Sida cordata*, *Urena sinuata* [local name- Okhra], *Sida cordata* [local name- Berella], *Sida rhombifolia*, *Abutilon indicum* [local name- Petari], *Hibiscus vitifolius* [local name- Bon carpus] of Malvaceae family; *Eclipta alba* [local name- Kukarim], *Acmella paniculata* [local name- Bon ganda], *Ageratina conyzoides* [local name- Uchunti], *Ageratina altissima* [local name- White snakererat], *Acmella oleracea* [local name- Eyeball plant], *Wedelia trilobata*, *Tridax procumbens* [local name- Tridhara], *Ageratina adenophora*, *Eclipta prostrata* [local name- False daisy], *Vernonia cinerea* [local name- Kukursunga], *Mikania cordata* [local name- Rabon lata] of Asteraceae family; *Crotalaria pollida aiton* [local name- Bon atashi], *Tephrosia purpurea* [local name- Bon nil] of Leguminosae family; *Cassia tora* [local name- Chakunda], *Mimosa pudica* [local name- Lajjabati], *Cassia sophera* [local name- Kalkasunda] of Fabaceae family, *Catharanthus roseus* [local name- Nayantara] of Apocynaceae family and *Scoracia dulcis* [local name- Bondhane] of Scrophulariaceae family etc. The institution had a small medicinal garden maintained by the department of Botany. The maximum part of the outdoor side of the campus is covered by various species of plants. The institution has another garden. Twenty five tree species (like Banyan, Guava etc.); eighty-one herb species (like Boat Lily, Indian Cress etc.); thirty-seven shrub species (like Blue Fox Tail, Yellow Elder etc.) and other thirty-seven plant species (like Malabar Nut, Giant Taro etc.) were observed. Some invasive plant species are also observed like- *Lantana* sp., *Parthenium* sp., and *Rumex* sp. (*Rumex* were mostly present in numbers). The total campus of the college was covered with trees, bushes and mainly grasses like- Asteraceae, Polygonaceae (it is dominant here) and Euphorbiaceae with various pteridophytes and planktons.

During the Van Mahotsav programme, Singur Government College had designed a plantation schedule engaging their students and faculty members from various departments in every year (before the pandemic it was celebrated in offline mode and in the pandemic situation it was celebrated in online mode). The name of each plant species was not displayed but they have the plan to do it in the near future. Normally pond water is used for gardening. No pesticides or fertilizers were used in college. Inside the college premises, no sacred groves were observed. Now, any garden-related activities were done under the administration of the Botany department.

The college has a nature club/ eco-club- they organize nature and environmental awareness programs like Van Mahotsav, documentation of flora and fauna inside college premises and make a social media page (Facebook page of Wild Flora & Fauna of Hooghly) throughout the year. Singur College celebrated awareness programs like- curriculum-based awareness programs etc. The institution has a plan to make an experimental garden (Greenhouse Garden making in the process), vegetable garden, medicinal garden (4002 feet), organic farming, botanical garden etc. with the help of recycling water use.



Solanum sisymbriifolium



Anisomeles ovata



Scoparia dulcis



Lippia nodiflora



Parthenium hysterophorus



Chloris barbata

By the based-on datasheet, the following table was made.

Regional Name	Common Name	Scientific Name	Family
রিঠা	Soapberries	<i>Sapindus trifoliatus</i>	Sapindaceae
বিলাতি পাত	Medio Picta	<i>Agave salmiana</i>	Agavaceae
তলমুলি	Palm Lily	<i>Yucca gloriosa</i>	Agavaceae
আম	Mango	<i>Mangifera indica</i>	Anacardiaceae
ছাতিম	Blackboard tree	<i>Alstonia scholaris</i>	Apocynaceae
কাঠ গোলাপ	Nag Champa	<i>Plumeria pudica</i>	Apocynaceae
শিশু	Indian rosewood	<i>Dalbergia sissoo</i>	Fabaceae
আকাশমনি	Auri	<i>Acacia auriculiformis</i>	Fabaceae
শিরীষ	Siris	<i>Albizia lebbek</i>	Fabaceae
মেঘ শিরীষ	Rain tree	<i>Albizia saman</i>	Fabaceae
কৃষ্ণচূড়া	Flamboyant	<i>Delonix regia</i>	Fabaceae
কনকচূড়া	Copperpod	<i>Peltophorum pterocarpum</i>	Fabaceae
তেঁতুল	Tamarind	<i>Tamarindus indica</i>	Fabaceae
ফুরস ফুল	Crepe-myrtle	<i>Lagerstroemia indica</i>	Lythraceae
নিম	Neem	<i>Azadirachta indica</i>	Meliaceae
কাঁঠাল	Jackfruit	<i>Artocarpus heterophyllus</i>	Moraceae
বট	Banyan	<i>Ficus benghalensis</i>	Moraceae
অশ্বথ	Peepal	<i>Ficus religiosa</i>	Moraceae
সজনৈ	Moringa	<i>Moringa oleifera</i>	Moringaceae
পেয়ারা	Common guava	<i>Psidium guajava</i>	Myrtaceae
কলা জাম	Malabar plum	<i>Syzygium cumini</i>	Myrtaceae
বাঁশ	Bamboo	<i>Bambusa vulgaris</i>	Poaceae
কুল	Jujube	<i>Ziziphus jujuba</i>	Rhamnaceae
বেল	Indian bael	<i>Aegle marmelos</i>	Rutaceae
লেবু	Lemon	<i>Citrus limon</i>	Rutaceae

Twenty-five types of tree species

Regional Name	Common Name	Scientific Name	Family
কালমেঘ	Kalmegh	<i>Andrographis paniculata</i>	Acanthaceae
বিলি	Philippine violet	<i>Barleria cristata</i>	Acanthaceae
বাসক	Malabar nut	<i>Adhatoda vasica</i>	Acanthaceae
কুলেখাড়া	Kokilaksha	<i>Hygrophila auriculata</i>	Acanthaceae
কাক জম্বা	Panicle'd Foldwing	<i>Peristrophe bicalyculata</i>	Acanthaceae
	Prostrate Justicia	<i>Justicia prostrata</i>	Acanthaceae
গোরক্ষ গজ	Gorakhdi	<i>Aerva lanata</i>	Amaranthaceae
	Brazilian Spinach	<i>Alternanthera sessilis</i>	Amaranthaceae
খানকুনি	Indian pennywort	<i>Cemella asiatica</i>	Convolvulaceae
নয়নভারা	Bright Eyes	<i>Catharanthus roseus</i>	Apocynaceae
রক্ত কররী	Rokto-korobi	<i>Nerium indicum</i>	Apocynaceae
ছাগল বাটি	Trellis-vine	<i>Pergularia daemia</i>	Asclepiadaceae
উসনি শাক	Toothache Plant	<i>Acmella paniculata</i>	Asteraceae
কালোকেশী	False Daisy	<i>Eclipta prostrata</i>	Asteraceae
বন পালং	Perennial Sowthistle	<i>Sonchus wightianus</i>	Asteraceae
ত্রিধারা	Coatbuttons	<i>Tridax procumbens</i>	Asteraceae
সচিমদি	Cupid's Shaving Brush	<i>Emilia sonchifolia</i>	Asteraceae
আগরা	Cocklebur	<i>Xanthium strumarium</i>	Asteraceae
বালসম	Balsam	<i>Impatiens balsamina</i>	Balsaminaceae
সরষে	Brown Mustard	<i>Brassica juncea</i>	Brassicaceae
হেলেশা	Indian cress	<i>Nasturtium indicum</i>	Brassicaceae
কলাবতী	Indian shot	<i>Canna indica</i>	Cannaceae
হলুদ হরহরিয়া ফুল	Asian Spider flower	<i>Cleome viscosa</i>	Capparaceae
শ্বর্নচাঁপা	Shona cabbage	<i>Cleome pentaphylla</i>	Capparaceae
কানাই বাঁশি	Benghal dayflower	<i>Commelina benghalensis</i>	Commelinaceae
	Boat Lily	<i>Rhoeo discolor</i>	Commelinaceae
শঙ্খ পুষ্প	Shankha pushpi	<i>Convolvulus prostratus</i>	Convolvulaceae
ভুই আকরা	Roundleaf Bindweed	<i>Evolvulus nummularius</i>	Convolvulaceae
	Kidney Leaf Morning Glory	<i>Memomia gangetica</i>	Convolvulaceae
ভূত	Indian Jalap	<i>Operculina turpethum</i>	Convolvulaceae
কেতকী	Crepe Ginger	<i>Costus speciosus</i>	Costaceae
ছাতা ঘাস	Umbrella Papyrus	<i>Cyperus alternifolius</i>	Cyperaceae
বাদা	Annual sedge	<i>Cyperus compressus</i>	Cyperaceae
	Rice sedge	<i>Cyperus difformis</i>	Cyperaceae
কেঁদ্রাবন	White water sedge	<i>Kyllinga nemoralis</i>	Cyperaceae
মুক্তাবুরি	Indian acalypha	<i>Acalypha indica</i>	Euphorbiaceae
খুদিফোঁড়া	Suryavarti	<i>Chrozophora rotleri</i>	Euphorbiaceae
বন তুলসি	Ban Tulsi	<i>Croton bonplandianus</i>	Euphorbiaceae
ভুই আমলা	Gale of the wind	<i>Phyllanthus niruri</i>	Euphorbiaceae
	Child Pick-A-Back	<i>Phyllanthus amarus</i>	Euphorbiaceae
কুঁচ	Rosary pea	<i>Abrus precatorius</i>	Fabaceae
	Fuzzy Fruited Rattlepod	<i>Crotalaria hebecarpa</i>	Papilionaceae
অভঙ্গী	Rattleweed	<i>Crotalaria indica</i>	Fabaceae
ঝার শিম	Guar	<i>Cyamopsis tetragonoloba</i>	Fabaceae
কোদালিয়া	Grona triflora	<i>Desmodium triflorum</i>	Fabaceae
বন চাকুন্দা	Pot Cassia	<i>Cassia tora</i>	Fabaceae
তুকমা ফুল	Pignut	<i>Hypis suaveolens</i>	Lamiaceae
শ্বেত দ্রোণ	Thumbai	<i>Leucas aspera</i>	Lamiaceae

Eighty-one types of herb species

Regional Name	Common Name	Scientific Name	Family
জগৎমদন	Willow-leaved Justicia	<i>Justicia gendarussa</i>	Acanthaceae
নীল কাঁটা ফুল	Blue fox tail	<i>Ecbolium viride</i>	Acanthaceae
কলকা ফুল	Yellow Oleander	<i>Thevetia nerifolia</i>	Apocynaceae
ছোটো আকন্দ	Calotrope	<i>Calotropis procera</i>	Asclepiadaceae
চন্দ্রপ্রভা	Yellow elder	<i>Tecoma stans</i>	Bignoniaceae
ঢোল কলমি	Bush Morning Glory	<i>Ipomoea carnea</i>	Convolvulaceae
লাল ভেরেণ্ডা	Bellyache bush	<i>Jatropha gossypifolia</i>	Euphorbiaceae
	Mercury Doughwood	<i>Micrococca mercurialis</i>	Euphorbiaceae
ভেনা	Castor bean	<i>Ricinus communis</i>	Euphorbiaceae
বিছুটি	Indian stinging nettle	<i>Tragia involucrata</i>	Euphorbiaceae
দীর্ঘ মুলি	Salparni	<i>Desmodium gangeticum</i>	Fabaceae
শোলা	Sola pith plant	<i>Aeschynomene aspera</i>	Fabaceae
পুষ্প বিলাস	Red Powderpuff	<i>Calliandra haematocephala</i>	Fabaceae
শ্বেত কাঞ্চন	White orchid	<i>Bauhinia acuminata</i>	Fabaceae
রাখাটুঁড়া	Peacock Flower	<i>Caesalpinia pulcherrima</i>	Fabaceae
কলকাসুন্দি	Senna sophera	<i>Cassia sophera</i>	Fabaceae
কলকাসুন্দা	Coffee senna	<i>Cassia occidentalis</i>	Fabaceae
দাদ মর্দন	Candle Bush	<i>Senna alata</i>	Fabaceae
গোপালী ফুল	Indian Catmint	<i>Anisomeles indica</i>	Lamiaceae
পোটারী	Indian mallow	<i>Abutilon indicum</i>	Malvaceae
জবা	Chinese hibiscus	<i>Hibiscus rosa-sinensis</i>	Malvaceae
বেরেলা	Common wireweed	<i>Sida acuta</i>	Malvaceae
শ্বেত বেরেলা	Arrowleaf sida	<i>Sida rhombifolia</i>	Malvaceae
কদুয়া	Burr Mallow	<i>Urena sinuata</i>	Malvaceae
বোতল ব্রাশ	Red bottlebrush	<i>Callistemon citrinus</i>	Myrtaceae
শিউলি	Night-flowering jasmine	<i>Nyctanthes arbortristis</i>	Nyctanthaceae
	Sea Grape	<i>Polygonum uvifera</i>	Polygonaceae
সাদা কুকরী	Marsh Buckwheat	<i>Polygonum glabrum</i>	Polygonaceae
রুঞ্জিনি	Jungle geranium	<i>Ixora coccinea</i>	Rubiaceae
হনুহানা	Night-blooming jasmine	<i>Cestrum nocturnum</i>	Solanaceae
ধুতুরা	Horn-of-plenty	<i>Datura metel</i>	Solanaceae
তিতা বেগুন	Turkey berry	<i>Solanum torvum</i>	Solanaceae
তামাক	Tobacco	<i>Nicotiana glauca</i>	Solanaceae
বন ওখরা	Chinese bur	<i>Triumfetta rhomboidea</i>	Tiliaceae
অগ্নিমছ	Sage Glory Bower	<i>Clerodendrum phlomidis</i>	Verbenaceae
কাঁটা মেহেদী	Golden dewdrop	<i>Duranta repens</i>	Verbenaceae
পুটস	West Indian Lantana	<i>Lantana camara</i>	Verbenaceae

Thirty-seven types of shrub species

Avian Diversity

Our college is surrounded by low agriculture lands cum wetland which once a part of Ganga-saraswati river basin. Hence many birds species that inhabit agriculture fields, grassland and wetlands can be seen. Birds that are shown in pictures were taken from our campus that contain a small grassland and campus adjoining agricultural fields.



Rostratula benghalensis (Greater Painted Snipe)



Lonchura atricapilla (Black headed munia)



Ploceus benghalensis (Black breasted weaver)

Conclusions:

- Our college is surrounded by low agriculture lands cum wetland which once a part of Ganga-saraswati river basin has rich biodiversity, both floral and faunal.
- The college ensures to minimize interference with natural ecosystem and sensitizes local people about the same.
- Faculties of the college are member of PBR committee of Singur Block and thus participates in preparation of the same.

WASTE AUDIT

Is there any system for segregation of solid waste? If yes, mention the initiatives	Yes, the college has implemented segregation of biodegradable and non-biodegradable waste. There are separate bins for collection for both types of waste at each floor of the main building and at canteen for this purpose. Also, there are two separate pits within the campus for disposal of such waste.
Is there any kind of liquid waste generation?	Liquid waste is generated by chemistry lab which is stored in separate containers and disposed by certified recycler company “Vital Waste” after proper treatment as a part of MoU with GGDC Singur
Is your institution a Plastic- free zone?	No, but the college is trying to incorporate the goal as a future plan.

Method of disposal of following waste types

Kitchen waste	Paper	Plastic	Metal	E- waste	Others
Pit for biodegradable waste inside college campus	Pit for biodegradable waste inside college campus	Pit for non biodegradable waste inside college campus	Pit for non biodegradable waste inside college campus	Collected in separate E-waste Bin to be collected by Vital Waste	There is an incinerator for disposing sanitary napkins in girls washroom
Is there any treatment for toilet/urinal/sanitary napkin waste?		Yes, there is one sanitary napkin vending machine and one sanitary napkin waste disposing machine in ladies washroom at ground floor of the main building of GGDC Singur			

Awareness about waste management

Are there any awareness programs on Waste management?	Yes, there are regular programs conducted by NSS of GGDC Singur inside and outside college for creating awareness about waste management.
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Any future plans of waste management?

- Making the campus plastic free
- Setting up vermicomposting unit to recycle kitchen waste.

Without the college waste, are there any other wastes that come from outside but pollute college premises? If yes, mention the sources with the name and why is it a problem?	Yes, there are garbage heaps beside the way leading to the college creating nuisance and loss of biodiversity.
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Which of the following is near your institution, mark the level of disturbance it creates on a scale of 1 to 9

Garbage heap	Municipal dump yard	Sewer line	Stagnant water	Open drainage	Industry	Bus / Railway station-	Market / Shopping complex / Public halls-
Yes	No	No	Yes	Yes	Yes	Yes	No

Summary of Solid Waste Management:

As per ground study for Solid Waste Management at GGDC Singur, it was found that mainly two types of waste bins had been used from starting time. No municipal dump yard or vats were found close to the institution. However, garbage heap, open drainage, stagnant water and one factory (Himadri Speciality Chemicals Limited, Singur Plant) were found adjacent to the institution. As the bus depot and market places, the railway station is not very far from the institution chances of pollution might be there if adequate precautions are not taken.

The college produces solid wastes as well as liquid wastes. But these wastes do not pollute round and surface water or air. The sources of solid wastes were mainly paper cups, laboratory wastes (very few amounts) etc. Though the sharp materials (blades, needles etc. were separated differently. The sources of liquid wastes were mainly observed from the toilet. The college has also planned to make a waste management system and a vermicomposting pit. The college is also segregating wastes in bins (with proper indicating colour labels).

There are treatment machines for toilet/urinal/sanitary napkin wastes. In the Ladies' toilet also some Sanitary Napkin Vending Machines were placed. Only one Sanitary Napkin Waste Machine and one Sanitary Napkin Vending machine were observed in the ladies toilet (on the ground floor) of the main building. The number of Sanitary Napkin Vending Machines was found less in number. Any other wastes from outside were not found inside the campus. Several recycling works were also reported from the college like the Botany department was generally found to use recycled papers; they also used printed/used paper for multiple purposes and also many other such practices. The College also conducted a waste wealth awareness programme at Subhash Pally village regularly by the NSS unit.

The college has Memorandum of Understanding (MoU) with certified recycling company 'Vital Waste' for recycling dry wastes including paper, plastic, metal, E-waste etc and also treatment and proper disposal of hazardous liquid waste from science laboratories.



Separate pits for waste disposal
at GGDC Singur



E waste management

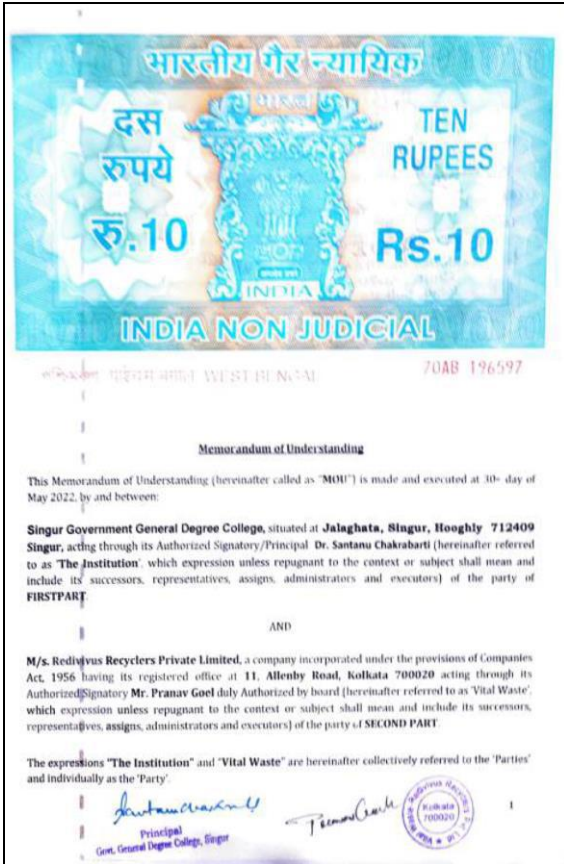


Liquid Waste Management



Solid waste management

Separate bins for collection of biodegradable and non-biodegradable waste at GGDC Singur



Memorandum of Understanding of GGDC Singur and Vital Waste

Certificate for waste recycling by GGDC Singur through Vital Waste

Number of buckets and their positions

On each floor of main building, 2 pairs of open buckets (one for biodegradable and one for non bio degradable waste) were observed. One open basket was observed in each of the sixteen departments. Science laboratories of Chemistry, Zoology and Botany departments had containers for disposing hazardous liquid waste to be collected and disposed by Vital Waste. Also in the canteen house, an empty open bucket in the student's union office, an open empty bucket in the canteen kitchen and an open empty bucket in the Sanskrit classroom were observed. By the based-on datasheet, the following table was made. This table data is purely made on the observation at the time of the survey work.

Waste Category	Location	Waste source	Waste Fate
Plastic Waste	Office room	Office room toilet	Thrown outside the dustbin later
Plastic Waste	Student's toilet	Student's toilet dustbin	Sanitary napkin incinerator machine
Plastic Waste	105	Chemistry laboratory+classroom dustbin	Thrown outside the dustbin later
Plastic Waste	103	Classroom dustbin	Thrown outside the dustbin later
Plastic Waste	Toilet (PH)	Toilet (PH) toilet	Thrown outside the dustbin later
Plastic Waste	Toilet	Toilet dustbin	Sanitary napkin incinerator machine
Plastic Waste	208	Zoology laboratory dustbin	Thrown outside the dustbin later
Plastic Waste	Staff room	Staff room dustbin	Thrown outside the dustbin later
Plastic Waste	Staff room	Staff room dustbin	Thrown outside the dustbin later
Plastic Waste	205 (A)	Botany laboratory dustbin	Thrown outside the dustbin later
Plastic Waste	205	Botany laboratory dustbin	Thrown outside the dustbin later
Plastic Waste	Toilet	Toilet dustbin	Thrown outside the dustbin later
Plastic Waste	311	Anthropology classroom dustbin	Sanitary napkin incinerator machine
Plastic Waste	Department of Physics	Classroom dustbin	Thrown outside the dustbin later
Plastic Waste	Rani Rashmoni Green University	Dustbin	Thrown outside the dustbin later
Plastic Waste	308	Physics laboratory dustbin	Thrown outside the dustbin later

Recommendations for future waste management:

- The institution should entertain (where possible) only locally sourced products for any official/ institutional purpose and biodegradable items manufactured by local people
- The establishment of plastic-free departments and plastic minimized classrooms will be encouraged and promoted.
- Eco-friendly seminars, symposiums, and annual programs can be planned by minimizing the utilization of flex, vinyl product, plastic bottles, and cups, one timed used pen, etc. as a regular habit.