



# Green Audit Report



## MANAGEMENT SYSTEM CONSULTANCY

Govt.Reg.No.200252020048281, MSME Reg.No.UDYAM-WB-14-0014572, GST No. 19FIIPM3803A1ZH

6<sup>th</sup> June 2023

MATHABHANGA COLLEGE, COOCHBEHAR

PIN-736146

Principal  
Mathabhanga College  
Mathabhanga, Cooch-Behar



**Green Audit Report\_Mathabhanga College, 2023**

To

The principal,  
Mathabhanga College,  
Cooch Behar  
West Bengal- 736146

Date: 6th June, 2023

**Sub: Submission of green audit report including energy, water, waste management**

Respected Sir,

On behalf of the management system consultancy, we are submitting the green audit report, including other parameters like energy, water, and waste management of your institution, on this day, i.e., 6th June 2023. The report contains a detailed analysis and significant recommendations for your institute.

We are grateful for your kind support and cooperation at the time of the work.

Yours sincerely,

*Amalesh Kr Mandal*

Management system consultancy  
UMA Apartment, Rishi Arobindo Road,  
Madhyamgram, Kolkata-700130

Email ID: [managementsystemconsultancy@gmail.com](mailto:managementsystemconsultancy@gmail.com)

Website: [www.mangementsystemconsultancy.in](http://www.mangementsystemconsultancy.in)

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## INTRODUCTION

To positively impact the eco-friendly atmosphere within and outside the college campus, the green audit is one of the most essential environmental practices for educational institutes. It can be defined as a systematic analysis of components, including recording, reporting, identification, quantification, etc., of different data on the college campus. It also determines how and where the College uses most of its energy, water, and other resources so that authorities can implement changes and make savings. It can also promote health consciousness, environmental awareness, values, and ethics.

Thus the College must evaluate its contributions toward a sustainable future. As environmental sustainability is becoming an increasingly important issue for our nation, the role of higher educational institutions in environmental sustainability is more prevalent.

## NEED FOR GREEN AUDITING

Conventionally, we use natural resources at our convenience level. Nevertheless, in the last few decades, we have been consuming excess natural resources like energy and water, which is our habit, especially in common areas. Now, it is necessary to ask our-self-

- ✓ whether our processes are consuming more than the required resources?
- ✓ Whether we are handling resources carefully?

The green audit will balance all of these and give us an efficient way to utilize natural resources. In the era of climate change, it is also necessary to check our methodology of using resources and learn to convert them into green and clean ones. Green audit provides an approach to it. It also increases overall consciousness among the people working in institutions toward an environment.

## GOALS OF GREEN AUDIT

The College has conducted a green audit with some specific goals, such as:

1. Identification and documentation of green practices.
2. Identify strengths and weaknesses in green practices.
3. Analyze and suggest solutions for problems identified.
4. Assess facility of different types of waste management.
5. Increase environmental awareness throughout campus.

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### OBJECTIVES OF GREEN AUDIT

1. To estimate the energy requirements of the College.
2. Set up goal, vision, and mission for Green practices on campus.
3. Establish and implement Environment Management in various departments.
4. To document the waste disposal system
5. To document the ambient environmental condition of the College's weather, air, and water.

### BENEFITS OF GREEN AUDIT TO EDUCATIONAL INSTITUTIONS

The main advantages of green audit to an Educational Institute are:

- ✓ It would help to prepare a plan to protect the environment.
- ✓ Recognize the cost-saving methods through waste minimization and management.
- ✓ Point out the prevailing and fourth-coming impacts on the environment.
- ✓ Empower the organizations to frame a better environmental performance.
- ✓ It portrays a good image of an institution which helps to build better relationships with the group of interested parties.
- ✓ Finally, it will help to build a positive impression for the upcoming NAAC visit.

### EXECUTIVE SUMMARY

#### (A) BRIEF ABOUT THE COLLEGE

1. Name of the Institution: Mathabhanga College, Mathabhanga, Coochbehar
2. No. of Department: UG:14
3. No. Enrolled Students: Current academic year, 2022-23: 6712
4. No of faculty members: 63
5. No. of Non-Teaching Members: 25
6. Total campus area: 10.53 acres
7. College building Spread area: 5800 sq. Mtrs.
  - (i) Girls common room:01
  - (ii) Garbage collection bins: For Degradable waste: 15  
For non-degradable waste: 15
  - (iii) Labs: 05

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(iv) Classroom: 35

(v) Boy's common room: 01

(vi) Boy's hostel: 01

**(B) ENVIRONMENTAL POLICY OF THE COLLEGE:**

Mathabhanga College, Mathabhanga, always believes in maintaining its standard in matters of environment and quality consciousness. It has taken several initiatives to protect its environment with a pollution-free campus. Being an environmentally conscious college, the administration and the students of the College look after the environment carefully. Every year, during the rainy season, tree plantation is carried out and carefully examined.

**ENVIRONMENTAL POLICY**

Both the teaching and Non-teaching staff of our College are committed to carrying out its activity for sustainable development. This we will achieve through the following:-

- i. To sensitize the students and staff regarding the use of water properly
- ii. To bring into use the 'Rain Water Harvesting' on the campus.
- iii. To maximize the use of ICT and minimize the use of paper. It will help to go towards 'Paperless Office'.
- iv. To use the solid waste through vermin compost on the campus and use it as a fertilizer.
- v. To reduce the 'sound pollution on the campus.
- vi. To maintain a green campus.

**(C) CONSTITUTION FOR GREEN AUDIT**

The Green Audit is carried out per the College's environmental policy and the Green Audit checklist. The audit aims to check the existing practices and provide advice for the development of environmental policy and practice in the areas of:

- ✓ Waste Management: (a) Solid waste management, (b) E-waste Management
- ✓ Water conservation management
- ✓ Tree plantations
- ✓ Energy use and conservation
- ✓ Eco-friendly campus
- ✓ Green environment and clean campus

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## EXECUTIVE SUMMARY

Mathabhanga College, a promising educational institute for undergraduate studies, is about 1.5 Km away from Mathabhanga town. It was established on 1st September 1969. This College is permanently affiliated with the Cooch Behar Panchanan Barma University and is included under sections 2 (F) and 12 (B) of the University Grants Commission Act. Mathabhanga College is generally managed by a Governing Body (West et al. XXVII of 1961) under the control of the D. P. I., West Bengal. Mathabhanga College possesses 10.78 acres of land. It has one two-stored building, two one-stored buildings, a rich Library, a Book Bank, a Boys' Hostel, a playground & a pond.

Presently the College is offering 14 undergraduate degree courses, with six associate professors (five male and one female), 57 teaching staff including assistant professors, and SACT teachers (46 male and 11 female). Mathabhanga College has 15 permanent non-teaching staff and ten casual non-teaching staff (out of 25, 05 are female). The institute provides a total of seven B. A Hons regular undergraduate courses (Bengali, English, Sanskrit, History, Philosophy, Political Science, and Economics) with ten B. A. Gen. regular undergraduate courses (Elective Bengali, Elective English, Sanskrit, History, Geography, Philosophy, Political Science, Economics, Education, and Sociology) and three B.Sc. (Hons. & Gen) regular undergraduate courses (Physics, Chemistry and Mathematics) with B. Com. (Hons. & Gen.), courses. A few college teachers are also active as research guides for Ph.D. courses. The institution offers students various vocational courses and training programs (workshops) by inviting eminent resource persons and delegates throughout the year. It engages in different activities with NGOs and institutions (like- ICA, Anudip Foundation, etc.). The NSS (National Service Scheme) unit activities have been carried out by engaging students (volunteers). There are various scheduled annual activities for cultural events and environmental events (like- Environment Day celebration, tree plantation event, Saraswati Puja, College Foundation Day, Fresher's Day celebration, Farewell program [department wise], Rabindra Jayanti, Vivekananda birthday, Nejjaji birthday, Independence Day, Basanta Utsav, health awareness program, village cleaning programs, etc.). Sports like activities on Yoga, College sports, Badminton, Football, Kabaddi, Karate, Boxing, etc., were performed by the college students as per their extra-curricular activities. During the governmental election program (central and state), the college administration allows them to use college premises for the smooth conduction of the election by utilizing different rooms and buildings and requiring official help with proper police guidance. IQAC (Internal Quality Assurance Cell) has arranged many training programs and awareness programs since its inception, and various meetings (more than four) were arranged by IQAC every year.

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## VISION

"VIDHWAN SARVATRA PUJYATE," A Sanskrit Sloke meaning "the learned are worshiped everywhere," has inspired Mathabhanga College since its inception. Located in rural Coochbehar district, most students are first learners and belong to either backward classes or minority communities with socioeconomic challenges. The vision of the College is to provide students with sufficient educational facilities at a minimum cost to empower them with education in a way that the younger section of society not only brings light knowledge to their own lives or community but to the entire nation and humanity.

Since the first evaluation cycle, the College has sincerely improved its quality status regarding educational value. The College has achieved sustainable improvement in vital parameters such as the expansion of the infrastructural base, increased access to teaching and learning resources, the development of the quality of teaching staff, and, above all, the research and extension activities of the faculties. Library facilities, an overall increase in the student-computer ratio, and free WIFI throughout the campus are also introduced during the last few years. After improving the parameters, we are going for our second cycle of NAAC accreditation.

## MISSION

The mission is to provide the necessary knowledge, skills, and values for graduates' education of attitudes and competencies. It also leads students to "create a 'raise' students to be intellectually and spiritually competent, socially engaged, social and responsible citizens who can impart knowledge, love, unity and inculcate 'national integration in the minds of all and make higher education a part of the social environment through community participation and sustainable development."

Mathabhanga College has the following Missions to impart its vision

- ✓ To provide quality education to all students irrespective of caste, creed, religion, and other socioeconomic disparities.
- ✓ To equip students with relevant knowledge, training, and creativity to thrive in various professions.
- ✓ To develop a sensitive and responsible youth force with social commitments towards the underprivileged and the downtrodden.
- ✓ To develop a commitment towards conserving the environment with a goal towards sustainable development.
- ✓ To introduce various skill base and value-added courses as suggested by the affiliated university for the implementation of NEP-2020 from the session 2023-24

  
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- ✓ To create research infrastructure to cope with a curriculum as mentioned in the 7th and 8th semesters of UG courses as mentioned by the affiliated university
- ✓ To create enough infrastructural facilities for Multidisciplinary courses, as mentioned by the University guideline

### GOOD POINTS OBSERVED

1. College has prepared a Green Environmental policy and has made efforts for sustainable development on campus.
2. College has formed a team of faculty and student which works to maintain biodiversity on the campus and also participates in preventing pollution in society through various drives
3. College has already installed solar panels to reduce energy consumption.
4. College has conducted Environment Awareness pieces of training and workshops for faculty and students.

### MAJOR RECOMMENDATIONS

1. More Energy and flow meters to be installed for monitoring energy and water consumption building-wise/department-wise.
2. PUC certificate for all the vehicles entering the campus must be made mandatory and checked by security.
3. College should maintain the legal register for the applicable environment-related regulations and comply with this as per the requirement.
4. Bio-waste: Composting system to be adopted.

### METHODOLOGY

In order to perform a green audit, the methodology included different tools such as the preparation of a questionnaire, physical inspection of the campus, observation, and review of the documentation, interviewing key persons, and data analysis, measurements, and recommendations. The study covered the following areas to summaries the present status of environmental management on the campus.

➤ **Water management**

- ✓ Raw Water

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- ✓ Drinking Water
- ✓ Laboratory Waste Water
- ✓ Sewage Water
- **Energy Conservation**
- ✓ Solar panel
- ✓ Diesel generator
- ✓ LPG
- ✓ Electricity
- ✓ Batteries
- **Waste management**
- **Green area management**

#### FOCUS AREA OF STUDY

- ✓ Water management
- ✓ Air Pollution Management
- ✓ Energy use & conservation
- ✓ Waste Management
- ✓ Green Belt area & Bio-diversity
- ✓ Environmental Initiative

#### WATER MANAGEMENT

Water is a valuable natural resource for all living organisms. It is freely available depending on a region's climate and topographic features. Although water is naturally freely available potable (drinkable) water is not available freely for human consumption. On our planet, 70% of the area is covered by water, but only 3% is fresh. Around 1.1 billion people in the world face a water crisis. Water pollution and wastage play a vital role in the water crisis. Water contamination is taking place at an alarming rate. Drinking or using contaminated water leads to many diseases or death. That is why it is essential to ensure that drinking water is safe, clean, and free from bacteria and disease. It is also essential to conserve, protect and manage the water resources availability and usage so that it is sustainably used. Our College examines the quality and usage of water on the college campus. Water auditing is conducted to evaluate raw water intake facilities and determine the facilities for water treatment and reuse. The concerned auditor investigates the relevant method that can be adopted and implemented to balance the demand and supply of water.

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USES AND MANAGEMENT

SOURCE OF WATER

Sl. No.	Resources	Quantity
1	No. of Deep tube well	02
2	No of Bore well	01
3	No of hand pump	02
4	Water reserve tank	30
5	A Big pond	-----

WATER USERS IN CAMPUS PER DAY

Sl. No.	Person in different section	Strength (No. of Person)
1	Staff	100
2	Hostel Boarders	20
3	Students including visitors	Approx. 3000
4	Labour	Approx. 20
5	Visitors	Approx. 500

The visitors of the College vary concerning different activities conducted on the college campus. During admission, different activities like induction programs are conducted on the college campus. The total number of College visitors increases to 2000 on such day. There are good numbers of visitor inflow to the College for RBU inquiry and study purposes. Thus, the average number of visitors per day is approximately 500.

QUANTITY OF WATER USED IN DIFFERENT SECTIONS OF THE CAMPUS

Sl. No.	Section	Water Use (Litre/day)
1	Academic building	7500
2	Administrative building	5000
3	Canteen	3000
4	Urinals and Toilets	9000

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5	Departments	8000
6	Laboratories	5000
7	Garden	10000
8	Drinking	8500
9	Hostel	2000
10	Construction	5000
Total		63000

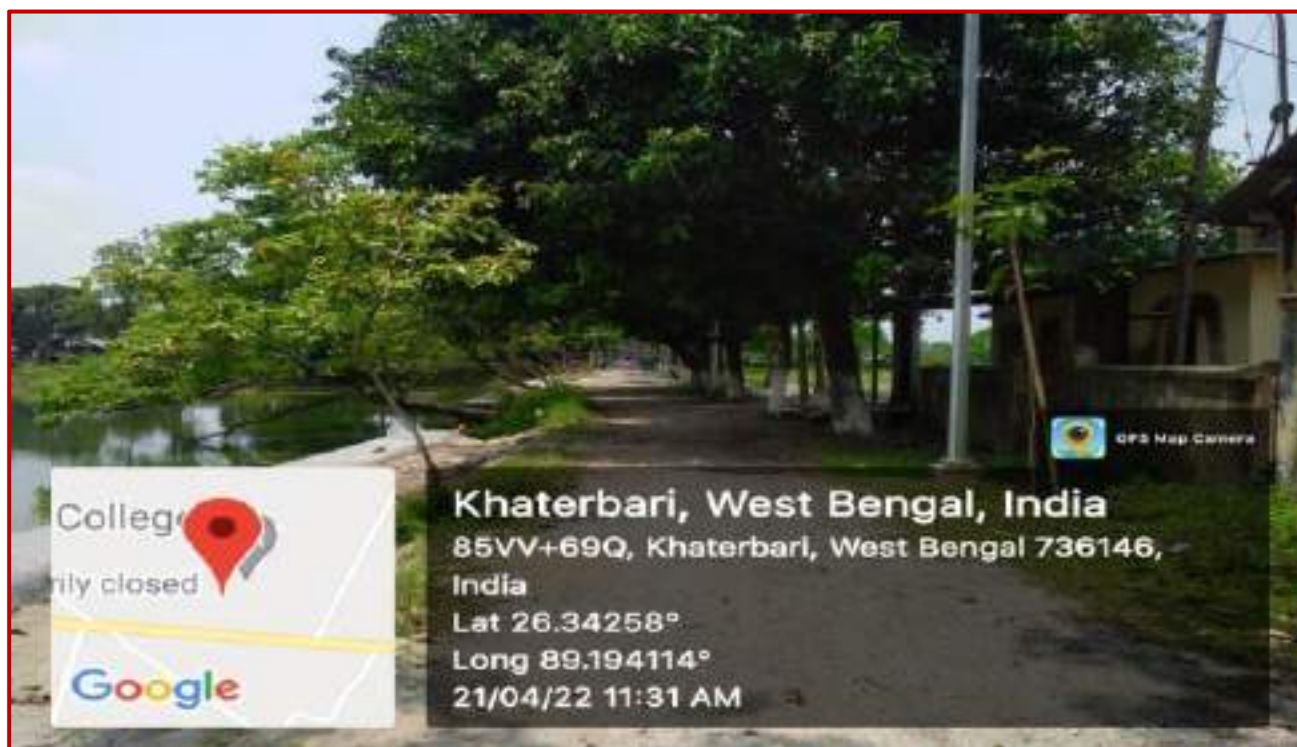
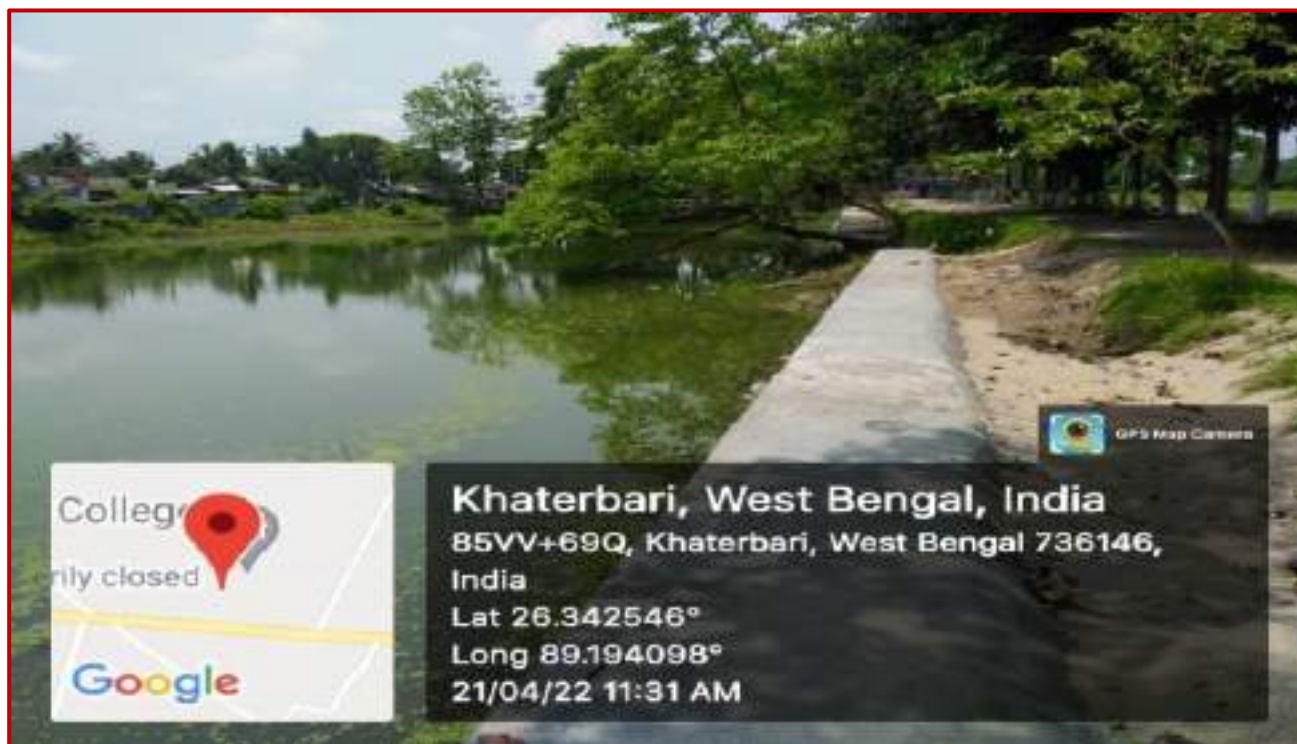
### MAJOR OBSERVATIONS IN REGARD OF WATER USAGES AND CONSERVATION PLAN

1. At present, waste water is not recycled or reused in any form on the college premises.
2. Water stored in the big pond are used for watering the garden. The garden is watered with a water pipe twice daily for 02 hours each time.
3. College does not have any vehicles, and hence there is no water usage for vehicle maintenance
4. The rainwater is drained by a water drain and released to the pond inside the boundary of the College at low terrain.

### RAINWATER HARVESTING

Mathabhanga College is situated in the rural part of Coochbehar district. The Coochbehar district received large amounts of rainwater during the rainy season. The Mathabahnga College Authority has dug up a pond to harvest rainwater from all parts of the College. Since the ponds are covered by a heavy boundary wall of concrete from two sides, waste of water during heavy rainfall is restricted.

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### RECOMMENDATIONS

College administration may consider these on top priority:-

1. To establish and implement the Water Conservation and Management Plan as per the environment Protection Act 1986



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2. The water Conservation Awareness Program to be conducted on World Water Day on 22nd March every year
3. Display boards for switching off the taps to be put on at an appropriate place
4. To eliminate the spillage and over usage of water in washbasins, urinals, and toiler push taps are highly recommended.
5. Automatic Leak detection systems for conservation of water.
6. Rain Water Harvesting shall be done per the Central Ground Water Board guidelines.
7. Special Internal Water Audit to be conducted quarterly and should be headed by HOD Chemistry Department.

### **AIR POLLUTION MANAGEMENT**

#### **PERIODIC AWARENESS PROGRAMME FOR STAFF, STUDENTS AND SOCIETY**

The College has continuously conducted awareness programs for staff, students, and society to protect and maintain the environment. The awareness is also done by arranging programs and rallies on various environmental and health issues. The college students and faculty members are involved in the activities through NSS/NCC. However, the audit team needed help finding a display board for conserving the environment on the college premises. Every day 100 two wheelers and 10 four-wheelers come to the college premises. However, no system is observed to check for PUC certificate, Vehicle Exhaust Gas Analysis, and Vehicular movement noise and vibration pollution. The air pollution at the time of ignition off and on is more than it is in riding mode.

#### **RECOMMENDATIONS**

1. World Environment Day is to be celebrated in college premises every year on 5th June, and all college students and staff shall get involved and take OATH for ENVIRONMENT CONSERVATION not only in College but also in every life span.
2. Chemistry Department shall monitor the Ambient Air Quality as per the guidelines of "The Air (Prevention and Control of Pollution) Act 1981
3. Exhaust gases shall be monitored, analyzed, and check regularly
4. Parking zone of the College shall be neat & clean.
5. Use of bicycles on campus to be promoted.

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### ENERGY USE AND CONSERVATION

This indicator addresses energy consumption, energy sources, monitoring, lighting, appliance, natural gas, and vehicles. Energy use is an essential aspect of campus sustainability and thus requires no explanation for its inclusion in the assessment.

#### OBSERVATIONS

Following Energy Sources are used in the college

- ✓ Electrical
- ✓ Diesel
- ✓ Petrol
- ✓ LPG
- ✓ Solar

#### ROOF TOP SOLAR PANELS

A solar photovoltaic system is another energy source (electricity) for the College, where a 20 kW solar photovoltaic system is installed on the roof of the new building to reduce electricity costs. A solar panel with photovoltaic cells absorbs energy from the sun and produces direct current, which is then converted into alternating current with the help of an inverter. Solar panels help reduce pollution and carbon footprint, run the facility sustainably, and reduce reliance on power/electric generators from power outages. This is a good thing that they do not have any disadvantages to the environment and human health. The facility uses solar panels to provide sufficient electricity for the administrative building.



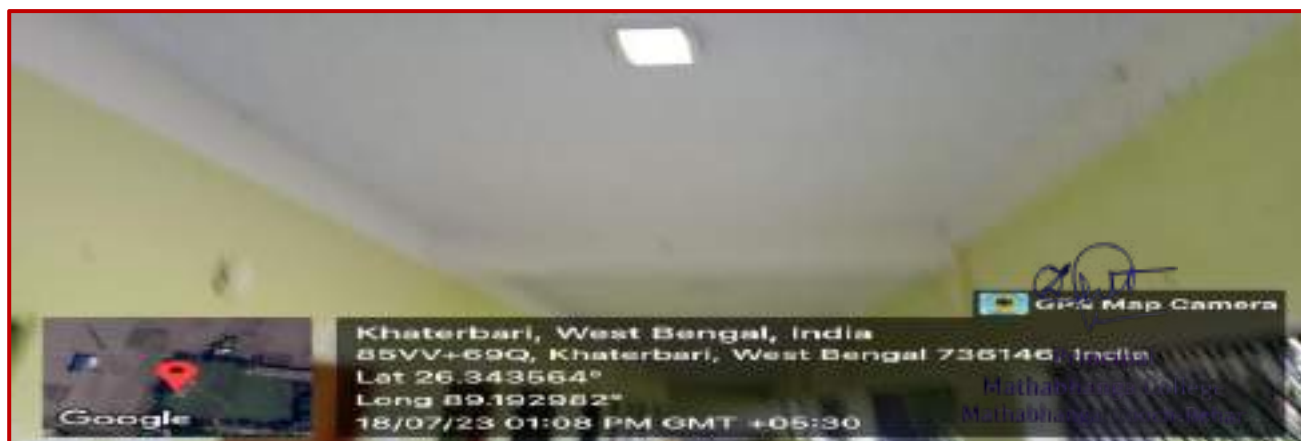


**Diesel Generator:** Our College provides a diesel generator with a capacity of 20kV. It takes 3L for one hour to power the output of unidirectional voltage and current. Teaching will be impacted when there is a power outage at the College, or the electricity is unsuitable for other reasons. Backup diesel generator sets provide continuous power for the College's education.



**LED Bulbs:** The total lighting (lighting) load of the College is about 85 kW, which includes LED Fled Light (75 watt), Led Fled Light (170 W), LED Bulb 30 W, LED lights 9 W, etc. LED lights are an excellent alternative source of saving electricity. The institution aims to use less energy-intensive electrical goods everywhere to conserve energy. The practice of energy conservation is inculcated among the stakeholders of the institution.

**Few pictures of LED light**







**Detailing of energy uses**

**MATHABHANGA COLLEGE**  
Mathabhanga - Cooch Behar  
Mathabhanga College, Elanza Road

Sl. No	Name	Quantity	
1.	Total No of Fan	441 Nos.	$\times 50 = 22050$
2.	Total No of Tube	812 Nos.	$\times 10 = 8120$
3.	L. E. D. Balls (9 Watt)	147 Nos.	$\times 9 = 1323$
4.	L. E. D. Balls (30 Watt)	12 Nos.	$\times 30 = 360$
5.	Exhaust Fan (12")	35 Nos.	$\times 30 = 1050$
6.	Wall Fan	12 Nos.	$\times 30 = 360$
7.	Round Fan	4 Nos.	$\times 70 = 280$
8.	Physics Lab (Filter 1000 Watt)	5 Nos.	$\times 1000 = 5000$
9.	Chemistry Lab (Filter 3000 Watt)	6 Nos.	$\times 1000 = 6000$
10.	Acquired Sewall	8 Nos.	$\times 20 = 160$
11.	Acquired Dig.	3 Nos.	$\times 25 = 75$
12.	Keros	3 Nos.	$\times 500 = 1500$
13.	Pump Dig (3Phase Line)	2 Nos.	$\times$
14.	Pump (1 Hpt)	2 Nos.	$\times 750 = 1500$
15.	Geopipes	70 Nos.	$\times 60 = 4200$
16.	L. E. D. Flat Light (75 Watt)	8 Nos.	$\times 75 = 600$
17.	L. E. D. Flat Light (170 Watt)	30 Nos.	$\times 170 = 5100$
18.	Vapor Light (250 Watt)	4 Nos.	$\times 250 = 1000$

85 kw  
excluding  
3ph dig pump

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### RECOMMENDATIONS

The College administration may consider it on top priority

1. To use Common or public Vehicle instead individual vehicles to conserve fossil fuel
2. Energy Consumption for each building should be estimated to design the energy conservation plan.
3. Instead of out-sourcing the Maintenance of Electrical Equipment, college concern department staff shall take that responsibility
4. Energy-saving awareness shall be done by displaying the boards at the appropriate place
5. Encourage natural ventilation and illumination by alteration in the building structures whenever going for new constructions

### GREEN BELT AREA & BIO-DIVERSITY

The Green Belt Area is meant for the conservation of nature and the aesthetic value of the college premises. The Green Area in the College includes the campus's plants, greenery, and sustainability to ensure that the buildings conform to green standards. This also helps to ensure that the Environmental Policy is enacted, enforced, and reviewed using various environmental awareness programs.



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### OBSERVATIONS

The campus is located near approximately 200 different plants and trees. Various tree plantation programs are being organized during the whole year at the college campus and surrounding villages through the NSS unit. This program helps encourage an eco-friendly environment that provides pure oxygen within the institute and awareness among villagers. The plantation program includes various types of indigenous species of ornamental and medicinal.



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DETAILS OF TREES AND PLANTS IN CAMPUS

Serial no	Plant's name	Scientific name
1	White Sirish	Albizia procera
2	Kainjal	Bischofia javaricaae
3	Jarul	Lagerstroemia flosregine
4	Kadam	Anthocephalus kadamba
5	Mahagoni	Swietenia microphylla
6	Gamari	Gmelina arborea
7	Jarul	Lagerstroemia flosregineae
8	Jamun	Syzygium cuminii
9	Krishnachura/ Gulmohor	Delonix regia
10	Shall	Shoria robusta
11	Chakunda	Cassia siamea
12	Gamari	Gmelina arborea
13	White Sirish	Albizia procera
14	Debdaru	Polyalythia longifolia
15	Bakul	Mimusops elengii
16	Mahagoni	Swietenia microphylla
17	Mahagoni	Swietenia microphylla
18	Chukrasia	Chukrasia tabularis
19	Chukrasia	Chukrasia tabularis
20	Kadam	Anthocephalus kadamba
21	Chukrasia	Chukrasia tabularis
22	Chukrasia	Chukrasia tabularis
23	Euclyptus	Euclyptus sp.
24	Jarul	Lagerstroemia flosregine
25	Shimul	Bombax ceiba
26	Chukrasia	Chukrasia tabularis
27	Aonla/ Amloki	Embellica officinalies
28	Kainjal	Bischofia javaricaae
29	Kainjal	Bischofia javaricaae
30	White Sirish	Albizia procera
31	Debdaru	Polyalythia longifolia
32	Bakain	Melia azedarach
33	White Sirish	Albizia procera
34	Debdaru	Polyalythia longifolia
35	Teak/ Segun	Tectona grandis
36	White Sirish	Albizia procera
37	Debdaru	Polyalythia longifolia
38	Teak/ Segun	Tectona grandis
39	Bahera	Terminalia bellerica
40	Banayan tree	Ficus bengalensis
41	Mango	Mangifera indica
42	Nim	Azadaricta indica
43	White Sirish	Albizia procera
44	Mango	Mangifera indica
45	Jackfruit	Avtocarpus heterophyllus



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46	Mango	Mangifera indica
47	Guava	Psidium guajava
48	Pipal	Ficus religiosa
49	Toon	Toona cilieta
50	Aonla/ Amolki	Embellica officinalies
51	Rain tree	Samanea saman
52	Phatka Sirish	Albizia falacatoria
53	Jarul	Lagerstroemia flosregineae
54	Jarul	Lagerstroemia flosregineae
55	Jamun	Syzygium cuminii
56	Jamun	Syzygium cuminii
57	Kadam	Anthocephalus kadamba
58	Jarul	Lagerstroemia flosregineae
59	Bohera	Terminalia bellerica
60	White Sirish	Albizia procera
61	Jarul	Lagerstroemia flosregineae
62	White Sirish	Albizia procera
63	Jarul	Lagerstroemia flosregineae
64	Kainjal	Bischofia javaricaae
65	White Sirish	Albizia procera
66	Pipal	Ficus religiosa
67	Teak	Tectona grandis
68	Kainjal	Bischofia javaricaae
69	Mango	Mangifera indica
70	Kainjal	Bischofia javaricaae
71	Jarul	Lagerstroemia flosregineae
72	Bohera	Terminalia bellerica
73	Kainjal	Bischofia javaricaae
74	Mahagoni	Swietenia microphylla
75	Mango	Mangifera indica
76	Mango	Mangifera indica
77	Sirish	Albizia lebbeck
78	Mango	Mangifera indica
79	Chikrashi	Chukrasia tabularis
80	Mahagoni	Swietenia microphylla
81	Gamari	Gmelina arborea
82	Kainjal	Bischofia javaricaae
83	Bohera	Terminalia bellerica
84	Jarul	Lagerstroemia flosregineae
85	Kainjal	Bischofia javaricaae
86	White Sirish	Albizia procera
87	White Sirish	Albizia procera
88	Chikrashi	Chukrasia tabularis
89	Gamari	Gmelina arborea
90	Jarul	Lagerstroemia flosregineae
91	Mango	Mangifera indica
92	Jackfruit	Avtocarpus heterophyllus
93	White Sirish	Albizia procera
94	White Sirish	Albizia procera
95	Arjun	Terminalia arjuna

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Mathabanga, Cooch-Bihar



Green Audit Report\_Mathabanga College, 2023

96	White Sirish	Albizia procera
97	Mahagoni	Swietwenia microphylla
98	Kainjal	Bischofia javaricaae
99	Bohera	Terminaliea bellerica
100	Mahagoni	Swietwenia microphylla
101	Bohera	Terminaliea bellerica
102	Gamari	Gmelina arborea
103	Kadam	Anthocephalus kadamba
104	Aonla/Amla	Embellica officinalies
105	Aonla/Amla	Embellica officinalies
106	Cuphea	Cuphea hyssopifolia
107	Mango	Mangifera indica
108	Neem	Azadirachta indica
109	Jackfruit	Avtocarpus heterophyllus
110	Kainjal	Bischofia javaricaae
111	Jarul	Lagerstroemia flosregineae
112	White Sirish	Albizia procera
113	Jarul	Lagerstroemia flosregineae
114	Mango	Mangifera indica
115	Mango	Mangifera indica
116	Mango	Mangifera indica
117	Mango	Mangifera indica
118	Mango	Mangifera indica
119	Mango	Mangifera indica
120	Mango	Mangifera indica
121	Mango	Mangifera indica
122	Mango	Mangifera indica
123	Mango	Mangifera indica
124	Kainjal	Bischofia javaricaae
125	Shimul	Bombax ceiba
126	Aonla/ Amlaki	Embellica officinalies
127	Gamari	Gmelina arborea
128	Jarul	Lagerstroemia flosregineae
129	Chikrashi	Chukrasia tabularis
130	Chikrashi	Chukrasia tabularis
131	Chikrashi	Chukrasia tabularis
132	Mahagoni	Swietwenia microphylla
133	Bakain	Melia azedarach
134	Shimul	Bombax ceiba
135	Bakain	Melia azedarach
136	Kadam	Anthocephalus kadamba
137	Rain tree	Samanea saman
138	Kathgua	Senegalia catechu
139	White Sirish	Albizia procera
140	Gamari	Gmelina arborea
141	Gamari	Gmelina arborea
142	Chikrashi	Gmelina arborea
143	Gamari	Gmelina arborea
144	Kadam	Anthocephalus kadamba
145	Jarul	Lagerstroemia flosregineae

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146	Chikrashi	Chukrasia tabularis
147	Bakul	Mimusops elengii
148	Gamari	Gmelina arborea
149	Gamari	Gmelina arborea
150	Gamari	Gmelina arborea
151	Gamari	Gmelina arborea
152	Gamari	Gmelina arborea
153	Gamari	Gmelina arborea
154	Gamari	Gmelina arborea
155	Mahagoni	Swietenia microphylla
156	Kadam	Anthocephalus kadamba
157	Jarul	Lagerstroemia flosregineae
158	Mahagoni	Swietenia microphylla
159	Kadam	Anthocephalus kadamba
160	Arjun	Terminalia arjuna
161	Panisaj	Terminalia elliptica
162	Jamun	Syzygium cuminii
163	Jamun	Syzygium cuminii
164	Kainjal	Bischofia javaricae
165	Kadam	Anthocephalus kadamba
166	Kadam	Anthocephalus kadamba
167	Jamun	Syzygium cuminii
168	Mango	Mangifera indica
169	Kadam	Anthocephalus kadamba
170	Bohera	Terminalia bellerica
171	Aonla/ Amla	Embellica officinalis
172	Jarul	Lagerstroemia flosregineae
173	Jamun	Syzygium cuminii
174	Pipal	Ficus religiosa
175	Jarul	Lagerstroemia flosregineae
176	Toon	Toona ciliata
177	Kadam	Anthocephalus kadamba
178	Bohera	Terminalia bellerica

**RECOMMENDATIONS**

The Management of the College may consider it a top priority that

1. Total of 30 % area is to be reserved for plantation
2. The Biodiversity is to be maintained while considering the plantation in future
3. The selection of trees species to be based on environmental conservation and carbon sequestration value
4. Artificial nests are recommended to attract different birds in their migrating and breeding season
5. Watering schedule to be planned according to the season

  
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6. Special Tree Plantation shall be celebrated every year on environment day and also competitions for bird species identification and knowing the tree values in terms of medicinal and environment conservation

## WASTE MANAGEMENT

### Management of the various types of degradable and non-degradable waste

#### Solid waste management:

For solid waste management, different bins have been placed in different departments. This ensures that solid waste is segregated at the source. Solid wastes are disposed of at the concrete-made disposal just behind the College's E-block campus.

#### Liquid Waste Management:

The wastewater is carried out through the pipeline. The Public Welfare Department makes this system of the state government.

**Biomedical Waste Management-** There is no biomedical waste management system in the College.

#### E-waste Management-

The electronic wastes from the computer lab are used to keep in a separate room.

**Waste recycling system-** There is no Waste recycling system in the College. However, there is a rainwater harvesting system in the College.

**The e-medical Waste Management-** There is no e-medical waste management system in the College.

**Hazardous chemicals and radioactive waste management-** There is no Hazardous chemicals and radioactive waste management system in the College.

A handwritten signature in blue ink, appearing to be 'S. K. Singh', is written over a circular stamp.

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Mathabhanga, Cooch-Bihar

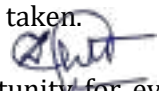




### ENVIRONMENTAL AWARENESS INITIATIVE

Mathabhanga College conducts regular training for staff and faculties regarding using bicycles, controlled use of paper, plantation targets, and implementation. Display of environment protection banners, posters like save water, save energy at prominent places, and waste disposal bins for wet and dry waste disposal bins for wet and dry waste disposal are some of the initiatives taken.

**World Environment Day celebration:** World Environment Day is an opportunity for everyone to realize the responsibility of caring for the Earth and becoming agents of change. World Environment Day is celebrated each year on 5th June. Mathabhanga College Alumni Association every year celebrates

  
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Mathabhanga, Cooch-Behar



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World Environment Day with great pomp and fervor in support of the environment with the planting of saplings, an initiative taken by the Secretary Sri Niren Barman along with the other members of the Association on the College premises. Instead of this, students were inspired and motivated to plant more trees in and around their surroundings, contributing to a healthier and cleaner society, which will make a greener Earth. NSS wings of Mathabhanga College also celebrated this day separately. Last two years, each volunteer have celebrated the days by planting samplings in their homes and surroundings. Mathabhanga College authority Celebrated World Environment Day on 5th June 2023 by planting various plant saplings. The principal of Mathabhanga College, Dr. Debasish Dutta, started the program by planting tree saplings along with NSS program officer Prof. HN Barman. Faculty members, non-teaching staffs.



Swachhata Abhijan: Cleanliness Drive by NCC wings of Mathabhanga College on 22<sup>nd</sup> May 2023



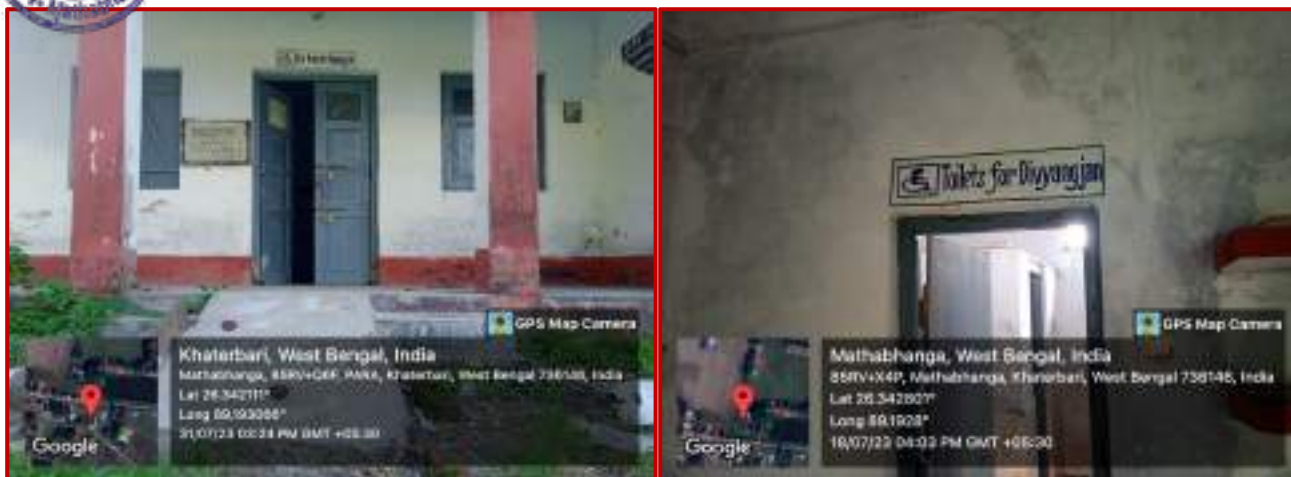
College cleanliness drive by Mathabhanga College NCC on 23th November 2022:



**Disabled-friendly, barrier free environment**

The institution has facilities like wheelchairs, wheelchair-accessible washrooms, ramps, and handrails for disabled students. The institution provides a barrier-free environment that allows persons with disabilities to move safely and freely while using the facilities.






MATHABHANGA COLLEGE POSTER FOR ENVIRONMENT CONCIIOUSNESS



OVERALL RECOMMENDATIONS

1. Lab wastewater quantity is not measured and drained to drainage system.
2. Planning of chemical consumption and purchase to be ensured
3. Composting of bio-degradable waste to be scientifically done
4. Septic tank sewage water analysis is to be done
5. Plan for green belt development to be prepared
6. Drinking water analysis shall be done as per IS 10500
7. Rainwater Harvesting (RWH) is to be done technically
8. Department wise electrical load consumption is to be done
9. List of equipment/instrument and their consumption of (energy/water) is to be estimated.
10. Awareness of energy and water conservation among students and staff by displaying boards.

  
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 Mathabhanga, Cooch-Behar



## Green Audit Report\_Mathabhanga College, 2023

11. Automatic leak detection's in the water-flowing pipeline
13. Water usage reduction techniques to be used
14. More tree plantation shall be done to maintain biodiversity and artificial nesting shall be installed.
15. Exhaust gas analysis shall be done.
16. Awareness among students and staff about green environment shall be done using tools like display boards

A handwritten signature in blue ink, appearing to read 'S. Prasad', is written over a horizontal line.

**Principal**  
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**Mathabhanga, Cooch-Bihar**



CERTIFICATES OF AUDIT



Certificate of Registration

This is to certify that

MATHABHANGA COLLEGE

P.O.: MATHABHANGA, DIST.: COOCH BEHAR, WEST BENGAL- 736146, INDIA

has been independently assessed by QRO and is compliant with the requirement of:

ISO 9001:2015

Quality Management System

For the following scope of activities:

TEACHING, LEARNING AND EVALUATION PROCESSS RELATING TO AWARDING OF BACHELOR DEGREES IN ARTS, COMMERCE AND SCIENCE CONSIDERING ENVIRONMENT FRIENDLY AND ENERGY EFFICIENCY MANNER IN COLLEGE GREEN CAMPUS

Date of Certification: 6th June 2023 2nd Surveillance Audit Due: 5th June 2025 1st Surveillance Audit Due: 5th June 2024 Certificate Expiry: 5th June 2026

Certificate Number: 305023060609Q



Head of Certification

Validity of this certificate is subject to annual surveillance audits to be done successfully on or before 365 days from date of the audit. (In case surveillance audit is not allowed to be conducted, this certificate shall be suspended / withdrawn)

The Validity of this certificate can be verified at www.qrocert.org

This certificate of registration remains the property of QRO Certification LLP and shall be returned immediately upon request.

India Office : QRO Certification LLP

142, 1st Floor, Avtar Enclave, Near Paschim Vihar West Metro Station, Delhi-110063, (INDIA)

Website : www.qrocert.org, E-mail : info@qrocert.org

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Govt. Reg. No. 200252020048281, MSME Reg. No. UDYAM-WB-14-0014572, GST No. 19F11PM3603A1EH

### Energy Audit Certificate

This Certificate is awarded to

**MATHABHANGA COLLEGE**

As part of the Institution's Initiatives for a Healthy & Sustainable College the audit was conducted.

We appreciate the immense efforts taken by Staff and Students towards the Energy Management and Conservation.

**Issued on Thursday, 6th June, 2023 valid till 5<sup>th</sup> June 2026**

*Analesh K. Mandal*

**MANAGEMENT SYSTEM CONSULTANCY**

*Authorization:*

- National Safety Council Certified (EMS: Registered ID No. 20210701001, OH&S Auditor: Merit Certificate No. 20211013005)
- National Productivity Council Certified (Energy Management Auditor: Certificate No. N95P15C244453/EL/50, Waste Management Certified: Certificate No. NB0P12C958750/EL/31, Water Audit Certification: Certificate No. N66P30C160424/EL/33)
- ISO 14001:2015 (Environment) (CQI-IRCA Delegate ID: 173839, Certificate No. 46957) Lead Auditor Certificate
- ISO 50001:2018 (Energy) (CQI-IRCA Delegate ID: 218048, Certificate No. ENR-00728617) Lead Auditor Certificate ISO 9001:2015 (Quality) (NABET Accredited, Certificate No. IRCLASS/QMS/2016/02/03/01 of 07) Lead Auditor Certificate

UMA Apartment, Rishi Arobindo Road, Madhyamgram, Kolkata-700130

Email ID: [managementsystemconsultancy@gmail.com](mailto:managementsystemconsultancy@gmail.com)

Website: [www.managementsystemconsultancy.in](http://www.managementsystemconsultancy.in)

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## Environment Audit

This Certificate is awarded to  
**MATHABHANGA COLLEGE**

As part of the Institution's Initiatives for a Healthy & Sustainable College the  
audit was conducted.

We appreciate the immense efforts taken by Staff and Students towards the  
Environment Protection and Conservation.

**Issued on Thursday, 6th June, 2023 valid till 5<sup>th</sup> June 2026**

*Analesh K. Mandal*

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### Green Audit Certificate

This Certificate is awarded to

**MATHABHANGA COLLEGE**

As part of the Institution's Initiatives for a Healthy & Sustainable College the audit was conducted.

We appreciate the immense efforts taken by Staff and Students towards the Efficient Management of Premise.

Issued on Thursday, 6th June, 2023 valid till 5<sup>th</sup> June 2026

*Anandesh K. Mandal*

**MANAGEMENT SYSTEM CONSULTANCY**

#### *Authorization:*

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Govt. Reg. No. 200252020048281, MSME Reg. No. UDYAM-WB-14-0014572, GST No. 19FI1PM3603A1EH

### Letter of appreciation

For

Implementing the recommendations suggested during the  
Green, Energy and Environment Audit Process

Awarded to

### MATHABHANGA COLLEGE

With reference to the above cited subject we appreciate the efforts of the College in implementing the activity of printing and putting up awareness posters related to Cleanliness, Energy, Waste, Water, Save Environment. The College has printed these and put them at appropriate locations in the premise. We hope the College continues similar efforts in the future as well. We have attached some of the photographic evidences in this letter.

Best regards,

*Anand K. Mandal*

**MANAGEMENT SYSTEM CONSULTANCY**

**Date: 06.06.2023**

*Authorization:*

- National Safety Council Certified (EMS: Registered ID No. 20210701001, OH&S Auditor: Merit Certificate No. 20211013005)
- National Productivity Council Certified (Energy Management Auditor: Certificate No. N95P15C244453/EL/30, Waste Management Certified: Certificate No. N80P12C958750/EL/31, Water Audit Certification: Certificate No. N66P80C160420/EL/33)
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Mathabhanga, Cooch-Behar

END OF THE REPORT