

GREEN AUDIT REPORT

2021-22

M.C. COLLEGE, BARPETA, ASSAM



PREPARED BY:

GREEN AUDIT COMMITTEE,

M.C. COLLEGE, BARPETA, ASSAM

অসম বিজ্ঞান প্রযুক্তিবিদ্যা আৰু পৰিৱেশ পৰিষদ
(বিজ্ঞান আৰু প্রযুক্তি বিভাগ, অসম চৰকাৰ)

ASSAM SCIENCE TECHNOLOGY AND ENVIRONMENT COUNCIL
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Date: 08.7.2022

CERTIFICATE

This is to certify that the “GREEN AUDIT” for Madhab Choudhury College, Barpeta has been conducted during July, 2021 and June, 2022 by the “Green Audit Committee” of the college to assess the green initiative, planning and efforts implemented in the college campus like Green Campus Management, plantations, waste management, rain water harvesting, vermicomposting and solar energy harvest. All activities have been verified physically on the spot on the 16th June, 2022.

The green audit also aims at to assess the impact of green initiatives for maintenance of eco-friendly campus.

(Jaideep Baruah)

Sr. Scientific Officer & Head I/c
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PREFACE

The surrounding and everything that affect an organism during its lifetime is collectively known as its environment. In another words “Environment is sum total of water, air and land interrelationships among themselves and also with the human being, other living organisms and property”. It includes all the physical and biological surrounding and their interactions. Environmental studies provide an approach towards understanding the environment of our planet and the impact of human life upon the environment.

The Green Audit Committee discusses the environment related issues and problems in the college campus within the following parameter:

Land use pattern and built-up area, biodiversity of the campus, activities of club/body in the college, drinking water, water use and management in the campus, air quality in the campus, noise level in the campus, energy requirement and management in the campus, generation of waste materials and waste disposal system, cleanliness practices, Best Practices and Suggestions.

GREEN AUDIT COMMITTEE
M.C. COLLEGE, BARPETA
ASSAM

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CONTENT

Chapters	Page Number
Introduction	7
Land use pattern and built-up area	8 – 13
Biodiversity of the campus	14 – 26
The Eco club unit	27 – 28
Drinking water, water use and management	29 – 31
Air quality in the campus	31 – 32
Noise level in the campus	32 – 33
Soil quality of the college campus	33 – 34
Energy audit in college premises	34 – 35
Generation of waste materials	35 – 39
E-waste management	39
Cleanliness practices	39 – 40
Best practices	40 – 41
Suggestions	42
Acknowledgement	43
Annexures	44

INTRODUCTION

Being the third oldest college in the undivided Assam, the college has passed the Platinum Jubilee in the year 2015. Since its inception in the year 1939, the institution is being engaged in imparting higher education to the society. In the year 1959, a new dimension to the glorious journey of the institution was incorporated when science stream was added to the institution. Started with only twelve teachers and about thirty students in the first year, the college now receives the service of nearly seventy numbers of teachers and about thirty numbers of non-teaching staff with about two thousand five hundred students in both Under Graduate and Post Graduate level under two streams of Arts and Science. Presently a total of fifteen numbers of departments from both the streams are being engaged in providing higher education among the students of which the department of Botany from the science stream and department of Assamese from the Arts stream are conducting PG programme under Gauhati University – the affiliating University of the college.

The college is located at the heart of Barpeta town – the *Satra Nagari* of Assam with an area of about **15.76 acres** (Annexure-I). The college campus is ornamented with a good number of floristic elements comprising the greenery of the whole campus. The floristic elements along with a managed water body (pond), a botanical garden, a reserved site for fox conservation have also been supporting a rich faunistic diversity in the college campus.

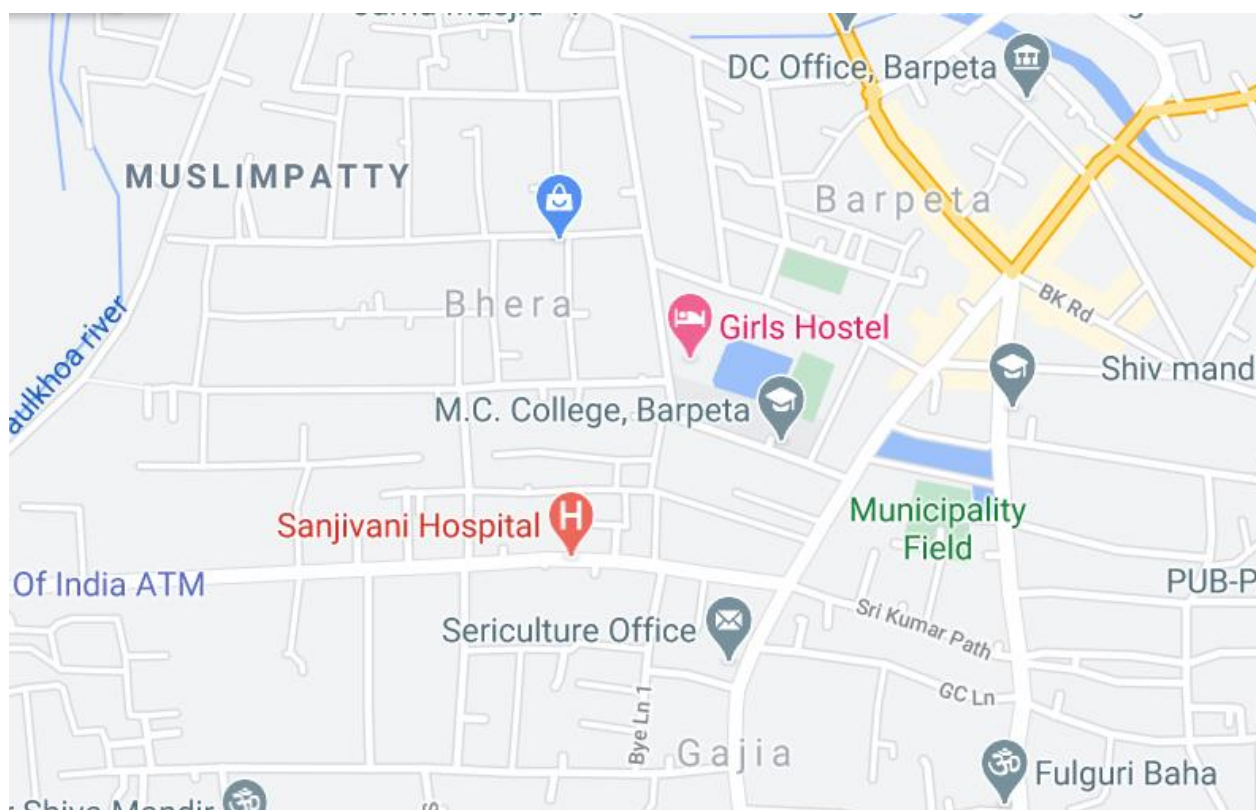


Fig 1: Google map of the College campus

LAND USE PATTERN AND BUILT-UP AREA:

The college has been occupying an area of 15.76 acre of which ~ 10.533 acre of land is in use for various purposes and ~5.227 acre is lying free contributing towards the greenery of the campus.

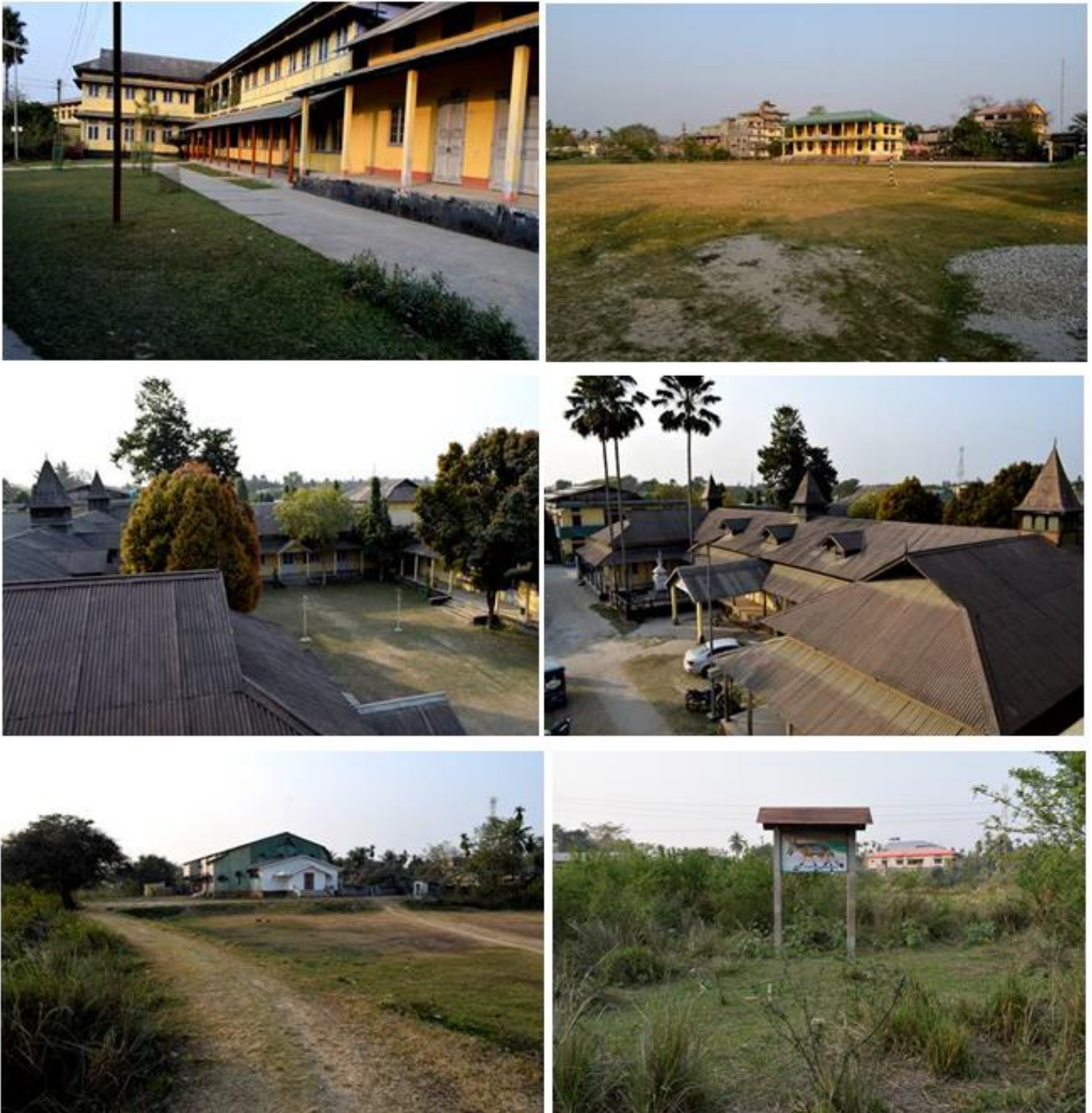


Fig: Panoramic view of the college campus

The buildings:

Initially all buildings of the college were of Assam-type reflecting the indigenous technology of construction blended with local culture. In present day also majority of the buildings are old Assam type constructions being used as class-rooms and office. The Assam type boys' hostel is still serving the purpose of comfortable accommodation for the students. Likewise,

Hostel-wardens' Quarter is also one another Assam type building. Thus, an area of about ~1.651 acre is being occupied by these buildings. However, all new constructions are planned for multi-storied RCC buildings and process is on to replace a few of the partially damaged old houses by the RCC construction. The Botany-Zoology department building still reflects the blended beauty of indigenous technology, art and culture of the area.

A total of nine number of buildings are still standing on its original position occupying an area of about ~1.651 acre land. The Principal's office and administrative buildings are already shifted to the new multi-storeyed RCC building constructed under the RUSA grant. One multi-storeyed RCC construction was already completed which is now-a-days being used as Seminar hall along with for other uses including Digital Class room, GIS lab, Genotoxicology lab and Guest House. Close to that building another three storied building has housed the department of Anthropology, Education and Geography. Another RCC construction adjacent to the Play-ground has been housed with Multi-level Gymnasium, boys' common room and classroom cum laboratory for the Beauty and Wellness course. More recently one more RCC construction has been completed to house the theory classrooms and Practical labs of PG course in Botany. Other existing constructions include a multi-storeyed building housing the canteen and girls' common room, an auditorium, multi-storeyed girls' hostel. Thus, the RCC constructions (completed and ongoing) occupy an area of about ~1.303 acre of land.

Other land use comprises constructions including in-campus concrete lanes connecting the buildings, bicycle sheds (two numbers), sheds for silent generators (two numbers), a store house with tin-shed attached to the canteen and concrete drainage system which occupy ~1.247 acre of land.

The play-ground, pond, badminton-court, small flower gardens etc. are, although under management, contribute towards beautification and greenery of the college campus. The fox-conservation site close to the auditorium has been serving the purpose of conservation of floristic and faunistic elements in the campus. All these together constitute an area of about ~6.611 acre of land (Table 1).

Table 1: Land use pattern in the college campus

Sl. No.	Land use category	Nature of land use	Area occupied (Acre)	% of total area occupied (Acre)
1	Building construction – Assam type	Assam type double-storeyed building occupied by the department of Botany and Zoology	0.150	0.95
		Assam type L-shaped house occupied by the department of Physics and Chemistry	0.365	2.32
		Assam type I-shaped house occupied by the College office	0.070	0.82
		Assam type I-shaped house occupied by the department of Philosophy and	0.130	0.82

		Political Science		
		Cluster of connected houses used as Office of the Principal, Office of the Examination Board, Department of History, Staff common room, Department of Assamese, Office of the IQAC, Classroom, Department of Economics.	0.530	3.36
		Assam type house used as Fourth grade employee's quarter located close to the Auditorium	0.013	0.82
		Assam type house used as used as classroom for Community College towards West bank of the pond	0.027	0.17
		Assam type house used as fish-fry production towards West bank of the pond	0.014	0.89
		Assam type house used as Apiculture classroom cum laboratory towards West bank of the pond	0.007	0.04
		Boys' Hostel	0.300	1.90
		Hostel Warden's quarter	0.045	0.29
2	RCC buildings	Multi-storeyed building with completed ground-floor under RUSA grant	0.231	1.47
		Double storied building being used as Career Counselling cell, Health Centre, Department of Computer Science, Kameswar Das Library, classroom.	0.099	0.63
		Three storeyed building being used as Seminar hall,	0.137	1.10

		Digital Class room, GIS lab, Genotoxicology lab and Guest House.		
		Three storeyed building being used as the department of Anthropology, Education and Geography.	0.084	0.53
		Two storeyed building being used as Pavilion, Gymnasium, Boys' Common room and classroom cum laboratory of the Beauty and Wellness course.	0.091	0.58
		Two storeyed building being used as Canteen and Girls' Common-room.	0.065	0.41
		Single storied RCC construction being used as College Auditorium	0.285	1.81
		Two storeyed Girls' Hostel.	0.140	0.89
		Proposed three storeyed PG building with completed foundation	0.114	0.72
3	Other RCC constructions	Toilets close to the Seminar Hall	0.007	0.04
		Toilets close to the department of Zoology and Botany	0.020	0.13
4	Store-house	Used as store of construction materials	0.010	0.06
5	Semi-concrete construction	Bi-cycle-shed in front of the department of Physics and Chemistry throughout the length of the boundary wall	0.074	0.47
		Bi-cycle-shed in front of the department of Zoology and Botany throughout the length of the boundary wall	0.001	0.01
		Proposed Vermicompost unit in the Botanical garden with completed foundation	0.001	0.01

		Proposed Poly-house unit in the Botanical garden with completed foundation	0.014	0.09
		Generator shed in front of Seminar hall	0.001	0.01
		Generator shed in front of Library	0.001	0.01
		Electricity transformer close to the Botanical garden	0.001	0.01
6	Concrete ground	Basket-ball court	0.114	0.72
		Entry-exit gate at five sites	0.011	0.07
7	Play ground	Used for outdoor sports activities	1.482	9.40
		Used as Badminton court	0.068	0.43
8	Water body	A big pond for beautification and hands-on activities for the Fishery course	1.262	8.01
9	Botanical garden	A site for plantation of medicinal, aromatic and other plants for teaching and research purpose.	0.068	0.43
10	Fox conservation centre	Unfenced land providing natural habitat to the fox	3.720	23.60
11	Flower garden	Beautification purpose in front of Principal's office	0.004	0.03
		Beautification purpose in front of the Kameswar Das Library	0.005	0.03
		Beautification purpose in front of in front of the department of Physics and Chemistry close to the boundary wall	0.002	0.01
12	Drain	Drains are under construction from East to West direction to connect the outlet with municipality drains	0.030	0.19
13	In-campus lanes	Both <i>pakka</i> and <i>katcha</i> lanes are connecting the buildings in the campus.	0.792	5.03
14	Café cum Photostat stall	On the ground floor of the Library	0.002	0.01

		building towards South side		
15	Water pump-house	On the ground floor of the Library building towards North side	0.007	0.04
16	Rain gauge installation	Rain gauge installed by the Indian Meteorological Department adjacent to the auditorium	0.006	0.04
17	Water tank installation	Water reservoir towards back side of the Physics department	0.001	0.01
		Water reservoir cum toilet towards back side of the Zoology department	0.020	0.13
18	Drinking water plant installation	Drinking water purification plant close to the Economics department	0.001	0.01
		Drinking water purification plant close to the office	0.001	0.01
19	Unused area (free-land)	South part of the Auditorium and North part of the Play-ground	5.227	33.17

Biodiversity of the campus:

The flora:

The college campus is rich in both floral and faunal diversity. Several species of plants and animals are found to exist in different seasons of the year. A number of old trees contribute towards the greenery of the campus. Apart from these, systematic plantations in different special occasions including World Environment Day also contribute towards beautification, overall greenery and conservation of biodiversity in the campus. The floristic elements of the campus have been facilitating favourable habitat for a variety of animal species in the campus.



The vegetation of the campus biodiversity comprises chiefly two types of plants, *viz*, planted and wild. As already mentioned, plantations under different special occasions are in the Botanical Garden, along the boundary of the campus, near or closure to the buildings and on the open spaces. A few plant species are, however, not found abundantly or found totally absent due to some unavoidable causes. (Table 2).

Table 2: List of planted species in the college campus

Sl. No.	Species	Family	Local name	Habit	Current status of existence
1	<i>Acacia auriculiformis</i> A. Cunn. ex Benth.	Mimosaceae	---	Tree	Absent – cut down for building construction
2	<i>Aegle marmelos</i> (L.) Corrêa	Rutaceae	Bel	Tree	Present
3	<i>Alstonia scholaris</i> (L.) R. Br.	Apocynaceae	Chatiyana	Tree	Absent – cut down for connecting-lane construction
4	<i>Anthocephalus cadamba</i> (Roxb.) Miq.	Rubiaceae	Kadam	Tree	Present
5	<i>Araucaria araucana</i> (Molina) Koch.	Araucareaceae	---	Tree	Present
6	<i>Azadirachta indica</i> A. Juss	Meliaceae	Neem	Tree	Present
7	<i>Bixa orellana</i> L.	Bixaceae	Sendur sash	Tree	Absent – cut down for building construction
8	<i>Bombax ceiba</i> L.	Bombacaceae	Shimalu	Tree	Absent – cut down for building construction
9	<i>Caesalpinia pulcherrima</i> (L.) Sw.	Fabaceae	Krishnachura	Tree	Present
10	<i>Duranta erecta</i> L.	Verbenaceae	---	Shrub	Present
11	<i>Erythrina stricta</i> Roxb.	Fabaceae	Madar	Tree	Present
12	<i>Ficus elastica</i> Roxb.	Moraceae	Robar	Tree	Present
13	<i>Ficus racemosa</i> L., Syn. <i>Ficus glomerata</i> Roxb.	Moraceae	Dimaru	Tree	Present
14	<i>Ficus religiosa</i> L.	Moraceae	Aahot	Tree	Present
15	<i>Grevillea robusta</i> A.Cunn. ex R.Br.	Proteaceae	Silver oak	Tree	Absent – cut down for connecting-lane construction
16	<i>Hibiscus rosa-sinensis</i> L.	Malvaceae	Joba	Shrub	Present
17	<i>Murraya paniculata</i>	Rutaceae	Kamini ful	Shrub	Present

	(L.) Jack				
18	<i>Mussaenda erythrophylla</i> Schumach. & Thonn.	Rubiaceae	Musanda	Shrub	Present
19	<i>Nerium indicum</i> Mill.	Apocynaceae	Korabi	Small tree	Present
20	<i>Nyctanthes arbor-tristis</i> L.	Oleaceae	Sewali	Small tree	Absent – cut down for building construction
21	<i>Phyllanthus emblica</i> L.	Euphorbiaceae	Aamlkhi	Tree	Present
22	<i>Polyalthia longifolia</i> Sonn.	Annonaceae	Debodaru	Tree	Present
23	<i>Psidium guajava</i> L.	Myrtaceae	Madhuri Aam	Tree	Present
24	<i>Tabernaemontana divaricata</i> (L.)R.Br. ex Roem. & Schult.	Apocynaceae	Kathanda	Shrub	Present
25	<i>Callistemon citrinus</i> (Curtis) Skeels	Myrtaceae	Botol brash	Shrub	Present
26	<i>Caryota urens</i> L.	Myrtaceae	Chao	Tree	Present
27	<i>Cassia fistula</i> L.	Caesalpiniaceae	Sonaru	Tree	Present
28	<i>Cephalotaxus</i> sp.	Cephalotaxaceae	---	Tree	Present
29	<i>Cocos nucifera</i> L.	Arecaceae	Narikol	Tree	Present
30	<i>Codiaeum variegatum</i> (L.) A.Juss.	Euphorbiaceae	Patabahar	Small tree	Present
31	<i>Cycas revoluta</i> Thunb.	Cycadaceae	---	Small tree	Present
32	<i>Dalbergia sissoo</i> Roxb.	Caesalpianaceae	Sisu	Tree	Present
33	<i>Lannea coromandelica</i> (Houtt.) Merr.	Anacardiaceae	Bhelkor	Tree	Present
34	<i>Livistona rotundifolia</i> (Lam.) Mart.	Arecaceae	Tokou	Tree	Present
35	<i>Malvaviscus arboreus</i> Cav.	Malvaceae	Soru joba	Small tree	Present
36	<i>Melia azedarach</i> L.	Meliaceae	Ghora neem	Tree	Present
37	<i>Mesua ferrea</i> Linn.	Clusiaceae	Nahor	Tree	Present
38	<i>Mimusops elengi</i> L.	Sapotaceae	Bakul	Tree	Present
39	<i>Morus alba</i> L.	Moraceae	Nooni	Tree	Present
40	<i>Murraya koenigii</i> (L.) Sprengel	Rutaceae	Norasingha	Tree	Present
41	<i>Tectona grandis</i> L.	Verbenaceae	Segun	Tree	Present
42	<i>Terminalia arjuna</i> (Roxb.) Wight & Arn.	Combretaceae	Arjun	Tree	Present
43	<i>Terminalia chebula</i> Retz.	Combretaceae	Silikha	Tree	Absent – cut down for building construction

44	<i>Trewia nudiflora</i> L.	Euphorbiaceae	Bhelkor	Tree	Present
45	<i>Ziziphus mauritiana</i> Lam.	Rhamnaceae	Bogari	Tree	Present
46	<i>Delonix regia</i> (Hook.) Raf.	Caesalpiniaceae	Radhachura	Tree	Present

(Specimen identification: Dr. D.K. Bhattacharjya)

Wild vegetation occurs in the undisturbed areas including the Fox Conservation Centre, back side of the hostels and along the boundary wall and on either side of the connecting lanes (Table 3).

Table 3: List of wild species in the college campus (Angiosperms only)

Sl. No.	Species	Family	Local name	Habit	Current status of existence
1	<i>Leucas aspera</i> (Wild.) Link	Lamiaceae	Doron	Herb	Available – occurring in wild condition
2	<i>Amaranthus spinosus</i> L.	Amaranthaceae	Kata-khutura	Herb	Available – occurring in wild condition
3	<i>Cyperus brevifolius</i> Rottb.	Cyperaceae	----	Herb	Available – occurring in wild condition
4	<i>Cleome hassleriana</i>	Cleomaceae		Herb	Available – occurring in wild condition
5	<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	Dubari	Herb	Available – occurring in wild condition
6	<i>Cyanotis axilaris</i> (L.) D.Don ex Sweet	Commelinaceae	---	Herb	Available – occurring in wild condition
7	<i>Eleusine indica</i>	Poaceae	Bobosa bon	Herb	Available – occurring in wild condition
8	<i>Paspalum conjugatum</i>	Poaceae	---		
9	<i>Oplismenus burmanni</i>	Poaceae	---		
10	<i>Evolvulus numularis</i>	Convolvulaceae	---		
11	<i>Digitaria ciliaris</i>	Poaceae	---	Herb	Available – occurring in wild condition
12	<i>Scoparia dulcis</i>	Scrophulariaceae	---	Herb	Available – occurring in wild

					condition
13	<i>Desmodium triflorum</i>	Papilionaceae	---	Herb	Available – occurring in wild condition
14	<i>Physalis minima</i>	Solanaceae	---	Herb	Available – occurring in wild condition
15	<i>Boerhavia sp.</i>	Nyctaginaceae	---	Herb	Available – occurring in wild condition
16	<i>Eragrostis congesta</i>	Poaceae	---	Herb	Available – occurring in wild condition
17	<i>Paspalum scrobiculatum</i>	Poaceae	---	Herb	Available – occurring in wild condition
18	<i>Cyperus halpan</i>	Cyperaceae	---	Herb	Available – occurring in wild condition
19	<i>Colocasia esculenta</i>	Araceae	Kachu	Herb	Available – occurring in wild condition
20	<i>Ludwigia octavalvis</i>	Onagraceae	---	Herb	Available – occurring in wild condition
21	<i>Typhonium trilobatum</i>	Araceae	---	Herb	Available – occurring in wild condition
22	<i>Piperomia pelucida</i>	Piperaceae	---	Herb	Available – occurring in wild condition
23	<i>Gnaphalium polycaulon</i>	Asteraceae	---	Herb	Available – occurring in wild condition
24	<i>Cleome viscosa</i>	Cleomaceae	---	Herb	Available – occurring in wild condition
25	<i>Pouzolzia zeylenica</i>	Urticaceae	---	Herb	Available – occurring in wild condition
26	<i>Psidium guajava</i>	Myrtaceae	Madhuriaam	Small tree	Available
27	<i>Ricinus communis</i>	Euphorbiaceae	Era	Shrub	Available-

					Available – occurring in wild condition
28	<i>Clerodendrum infortunatum</i>	Lamiaceae	---	Shrub	Available- Available – occurring in wild condition
29	<i>Solanum nigrum</i>	Solanaceae	Fiskuti	Herb	Available- Available – occurring in wild condition
30	<i>Phyllanthus fraternus</i>	Phyllanthaceae	Bhui aamlokhi	Herb	Available- Available – occurring in wild condition
31	<i>Drymeria diandra</i>	Caryophyllaceae	Laai-jabori	Herb	Available- Available – occurring in wild condition
32	<i>Murraya koenigii</i>	Rutaceae	Norasingsha	Small tree	Available- Available – occurring in wild condition
33	<i>Echinochloa colona</i>	Poaceae	Jaitar	Herb	Available- Available – occurring in wild condition
34	<i>Ageratum conyzoides</i>	Asteraceae	Gendheli- bon	Herb	Available- Available – occurring in wild condition
35	<i>Commelina caroliniana</i>	Commelinaceae	---	Herb	Available- Available – occurring in wild condition
36	<i>Oxalis corniculata</i>	Oxalidaceae	Tengeshi	Herb	Available- Available – occurring in wild condition
37	<i>Commelina benghalensis</i>	Commelinaceae	Kona- shimalu	Herb	Available- Available – occurring in wild condition
38	<i>Murdannia nodiflora</i>	Commelinaceae	---	Herb	Available- Available –

					occurring in wild condition
39	<i>Oldenlandia corymbosa</i>	Rubiaceae	Sarpajiva	Herb	Available- Available – occurring in wild condition
40	<i>Ocimum gratissimum</i>	Lamiaceae	Ram-Tulashi	Shrub	Available – occurring in wild condition
41	<i>Cassia tora</i>	Caesalpiniaceae	---	Herb	Available – occurring in wild condition
42	<i>Euphorbia hirta</i>	Euphorbiaceae	---	Herb	Available – occurring in wild condition
43	<i>Blumea lacera</i>	Asteraceae	---	Herb	Available – occurring in wild condition
44	<i>Hydrocotyle javanica</i>	Apiaceae	Saru- manimuni	Herb	Available – occurring in wild condition
45	<i>Hydrocotyle sibthorpioides</i>	Apiaceae	---	Herb	Available – occurring in wild condition
46	<i>Centella asiatica</i>	Apiaceae	Bor- manimuni	Herb	Available – occurring in wild condition
47	<i>Cyanthillium cinereum</i>	Asteraceae	---	Herb	Available – occurring in wild condition
48	<i>Oxalis debilis</i>	Oxalidaceae	---	Herb	Available
49	<i>Cannabis sativa</i>	Cannabinaceae	---	Shrub	Available – occurring in wild condition
50	<i>Glycosmis pentaphylla</i>	Rutaceae	---	Shrub	Available
51	<i>Grewia sapida</i>	Tiliaceae	---	Small tree	Available
52	<i>Imperata cylindrica</i>	Poaceae	Kanhi-bon	Herb	Available – occurring in wild condition
53	<i>Tephrosia purpurea</i>	Caesalpiniaceae	---	Shrub	Available
54	<i>Calamus L.</i>	Arecaceae	---	Shrub	Available
55	<i>Lagerstroemia speciosa</i>	Lythraceae	Ejar	Small tree	Available

56	<i>Syzygium cumini</i>	Myrtaceae	Jamu	Tree	Available
57	<i>Calotropis gigantea</i>	Apocynaceae	Akon	Shrub	Available
58	<i>Persicaria hydropiper</i>	Polygonaceae	Bihlongoni	Herb	Available
59	<i>Polygonum orientale</i>	Polygonaceae	Bor-bihu	Herb	Available – occurring in wild condition
60	<i>Rumex nepalensis</i>	Polygonaceae	---	Herb	Available – occurring in wild condition
61	<i>Solanum torvum</i>	Solanaceae	Kotahi bengena	Herb	Available – occurring in wild condition
62	<i>Ipomea carnea</i>	Convolvulaceae	Amor	Shrub	Available – occurring in wild condition
63	<i>Polygonum plebeium</i>	Polygonaceae	---	Herb	Available – occurring in wild condition
64	<i>Rumex maritimus</i>	Polygonaceae	---	Herb	Available – occurring in wild condition
65	<i>Lindernia crustacea</i>	Scrophulariaceae	---	Herb	Available – occurring in wild condition
66	<i>Grangea maderaspatana</i>	Asteraceae	----	Herb	Available – occurring in wild condition
67	<i>Stellaria media</i>	Caryophyllaceae	---	Herb	Available – occurring in wild condition
68	<i>Senna siamea</i>	Caesalpiniaceae	---	Shrub	Available
69	<i>Amaranthus viridis</i>	Amaranthaceae	---	Herb	Available – occurring in wild condition
70	<i>Desmodium triflorum</i>	Papilionaceae	---	Herb	Available – occurring in wild condition
71	<i>Andropogon ascinoides</i>	Poaceae	---	Herb	Available – occurring in wild condition
72	<i>Cardiospermum helicacabum</i>	Sapindaceae	---	Climber	Available
73	<i>Alternanthera sessilis</i>	Amaranthaceae	---	Herb	Available – occurring in

					wild condition
74	<i>Alternanthera philoxeroides</i>	Amaranthaceae	---	Herb	Available – occurring in wild condition

(Specimen identification: Dr. D.K. Bhattacharjya)

The Medicinal plant garden:

A few selective plant species are also planted in the Medicinal Plant Garden (Botanical Garden) of the campus. The species are mainly with medicinal importance although a number of plant species of varied importance are also planted as a measure to *in situ* conservation (Table 4).



Table 4: List of species conserved in the Botanical Garden of the college

Sl. No.	Species	Family	Local name	Habit	Current status of existence
1	<i>Bauhinia variegata</i>	Fabaceae	Kanchan	Small tree	Available
2	<i>Aloe vera</i>	Asphodelaceae	Chalkunwari	Herb	Available
3	<i>Eringium foetidum</i>	Apiaceae	Man-dhaniya	Herb	Available
4	<i>Cycas sp.</i>	Cycadaceae	---	Small tree	Available
5	<i>Vitex negundo</i>	Verbenaceae	Pachatiya	Small tree	Available
6	<i>Tabernaemontana divericata</i>	Apocynaceae	Kathanda phool	Shrub	Available
7	<i>Mimosa pudica</i>	Mimosaceae	Lajukibon	Herb	Available
8	<i>Alternanthera brassiliana</i>	Amaranthaceae	Bishlyakarni	Herb	Available
9	<i>Nepenthes khasiana</i>	Nepenthaceae	Kolashi udvid	Shrub	Available
10	<i>Hibiscus rosa-sinensis</i>	Malvaceae	Joba	Small tree	Available
11	<i>Litchi chinensis</i>	Sapindaceae	Lichu	Small tree	Available
12	<i>Saraca indica</i>	Fabaceae	Ashok	Small tree	Available
13	<i>Paederia foetida</i>	Rubiaceae	Bhedai lota	Climber	Available
14	<i>Adhatoda vasica</i>	Acanthaceae	Bashok	Shrub	Available
15	<i>Clerodendrum colebrookianum</i>	Lamiaceae	Nefafu	Shrub	Available
16	<i>Myrraya paniculata</i>	Rutaceae	Mamini kanchon	Shrub	Available
17	<i>Glycyrrhiza glabra</i>	Fabaceae	Jyesta madhu	Cliber	Available
18	<i>Sauropus androgynus</i> (L.) Merr.	Phyllanthaceae	Multivitamin	Shrub	Available

19	<i>Swertia chirayita</i>	Gentianaceae	Chirota	Shrub	Available
20	<i>Tradescantia spathacea</i>	Commelinaceae	---	Herb	Available
21	<i>Mangifera indica</i>	Anacardiaceae	Aam	Tree	Available
22	<i>Bryophyllum pinnatum</i>	Crassulaceae	Dupor tenga	Herb	Available
23	<i>Nyctenthes arbor-tristis</i>	Oleaceae	Sewali	Small tree	Available
24	<i>Euphorbia antiquorum</i>	Euphorbiaceae	Siju	Herb	Available
25	<i>Datura stramonium</i>	Solanaceae	Dhatura	Shrub	Available
26	<i>Araucaria araucana</i>	Araucariaceae	---	Tree	Available

(Specimen identification: Dr. D.K. Bhattacharjya)

The garden also possesses a “Polyhouse” and a vermicompost plant.

The polyhouse (Greenhouse): The polyhouse is constructed to cultivate few plants including some orchids and the plants of medicinal importance under controlled environment. The structure will facilitate to maintain the plantation throughout all seasons of the year.



The vermicompost plant: The plant in the garden campus is installed to fulfil dual purpose. The plant is serving as the repository of organic wastes on one hand and production unit of the compost on the other. Selective earthworm strains, collected from the *Krishi Vigyan Kendra*, Howly are maintained in the plant to convert the organic wastes into compost.

The fauna:

Along with floristic elements, several animal species are also found to present in the college campus. A variety of bird species (**Table 5**), Odonates (**Table 6**), reptiles, fishes, arthropods and mammals etc. are found to appear in the campus in different seasons of the year.



Table 5: Birds of M C College campus

Family	Common Name	Scientific Name
Columbidae	Rock Pigeon	<i>Columba livia</i>
	Spotted Dove	<i>Streptopelia chinensis</i>
	Yellow-footed Green-Pigeon	<i>Treron phoenicopterus</i>
Cuculidae	Greater Coucal	<i>Centropus sinensis</i>
	Asian Koel	<i>Eudynamys scolopaceus</i>
	Common Hawk-Cuckoo	<i>Hierococcyx varius</i>
Apodidae	Asian Palm-Swift	<i>Cypsiurus balasiensis</i>
Rallidae	White-breasted Waterhen	<i>Amaurornis phoenicurus</i>
Charadriidae	Little Ringed Plover	<i>Charadrius dubius</i>
Scolopacidae	Common Sandpiper	<i>Actitis hypoleucos</i>
Ciconiidae	Asian Openbill	<i>Anastomus oscitans</i>
	Lesser Adjutant	<i>Leptoptilos javanicus</i>
Anhingidae	Oriental Darter	<i>Anhinga melanogaster</i>
Phalacrocoracidae	Little Cormorant	<i>Microcarbo niger</i>
Ardeidae	Little Egret	<i>Egretta garzetta</i>
	Cattle Egret	<i>Bubulcus ibis</i>
	Indian Pond-Heron	<i>Ardeola grayii</i>
Accipitridae	Oriental Honey-buzzard	<i>Pernis ptilorhynchus</i>
	Booted Eagle	<i>Hieraaetus pennatus</i>
	White-eyed Buzzard	<i>Butastur teesa</i>
	Black Kite	<i>Milvus migrans</i>
Strigidae	Asian Barred Owlet	<i>Glaucidium cuculoides</i>
	Spotted Owlet	<i>Athene brama</i>
Alcedinidae	Common Kingfisher	<i>Alcedo atthis</i>
	White-throated Kingfisher	<i>Halcyon smyrnensis</i>
Meropidae	Green Bee-eater	<i>Merops orientalis</i>
	Blue-tailed Bee-eater	<i>Merops philippinus</i>
Megalaimidae	Coppersmith Barbet	<i>Psilopogon haemacephalus</i>
	Blue-eared Barbet	<i>Psilopogon duvaucelii</i>
	Lineated Barbet	<i>Psilopogon lineatus</i>
	Blue-throated Barbet	<i>Psilopogon asiaticus</i>
Picidae	Fulvous-breasted Woodpecker	<i>Dendrocopos macei</i>
	Black-rumped Flameback	<i>Dinopium benghalense</i>
Psittaculidae	Rose-ringed Parakeet	<i>Psittacula krameri</i>
	Red-breasted Parakeet	<i>Psittacula alexandri</i>
Oriolidae	Black-hooded Oriole	<i>Oriolus xanthornus</i>
Artamidae	Ashy Woodswallow	<i>Artamus fuscus</i>
Aegithinidae	Common Iora	<i>Aegithina tiphia</i>
Rhipiduridae	White-throated Fantail	<i>Rhipidura albicollis</i>
Dicruridae	Black Drongo	<i>Dicrurus macrocercus</i>
	Hair-crested Drongo	<i>Dicrurus hottentottus</i>
Laniidae	Brown Shrike	<i>Lanius cristatus</i>
	Grey-backed Shrike	<i>Lanius tephronotus</i>
Corvidae	Rufous Treepie	<i>Dendrocitta vagabunda</i>
	House Crow	<i>Corvus splendens</i>
	Large-billed Crow	<i>Corvus macrorhynchos</i>
Stenostiridae	Grey-headed Canary-Flycatcher	<i>Culicicapa ceylonensis</i>
Paridae	Cinereous Tit	<i>Parus cinereus</i>
Cisticolidae	Common Tailorbird	<i>Orthotomus sutorius</i>
Hirundinidae	Barn Swallow	<i>Hirundo rustica</i>
Pycnonotidae	Red-vented Bulbul	<i>Pycnonotus cafer</i>
Phylloscopidae	Dusky Warbler	<i>Phylloscopus fuscatus</i>

	Greenish Warbler	<i>Phylloscopus trochiloides</i>
Zosteropidae	Indian White-eye	<i>Zosterops palpebrosus</i>
Leiothrichidae	Jungle Babbler	<i>Turdoides striata</i>
Sturnidae	Common Hill Myna	<i>Gracula religiosa</i>
	Asian Pied Starling (Pied Myna)	<i>Gracupica contra</i>
	Chestnut-tailed Starling	<i>Sturnia malabarica</i>
	Common Myna	<i>Acridotheres tristis</i>
	Jungle Myna	<i>Acridotheres fuscus</i>
	Great Myna	<i>Acridotheres grandis</i>
Muscicapidae	Oriental Magpie-Robin	<i>Copsychus saularis</i>
	Taiga Flycatcher	<i>Ficedula albicilla</i>
Dicaeidae	Scarlet-backed Flowerpecker	<i>Dicaeum cruentatum</i>
Nectariniidae	Purple Sunbird	<i>Cinnyris asiaticus</i>
	Crimson Sunbird	<i>Aethopyga siparaja</i>
Estrildidae	Scaly-breasted Munia	<i>Lonchura punctulata</i>
Passeridae	House Sparrow	<i>Passer domesticus</i>
	Eurasian Tree Sparrow	<i>Passer montanus</i>
Motacillidae	Grey Wagtail	<i>Motacilla cinerea</i>
	Citrine Wagtail	<i>Motacilla citreola</i>
	White Wagtail	<i>Motacilla alba</i>

Table 6: List of Odonates (Dragonflies and Damselflies) spotted in M.C. college campus

Order- Odonata	
Sub-order-Zygoptera	
Sl. No.	Family- Lestidae
1	<i>Lestes praemorsus</i> (Hagen in Selys, 1862)
Family- Chlorocyphidae	
2	<i>Libellago lineata</i> (Burmeister, 1839)
Family- Coenagrionidae	
3	<i>Aciagrion hisopa</i> (Selys, 1876)
4	<i>Aciagrion pallidum</i> (Selys, 1891)
5	<i>Agriocnemis femina</i> (Brauer, 1868)
6	<i>Agriocnemis lacteola</i> (Selys, 1877)
7	<i>Agriocnemis pygmaea pygmaea</i> (Rambur, 1842)
8	<i>Ceriagrion cerinorubellum</i> (Brauer, 1865)
9	<i>Ceriagrion coromandelianum</i> (Fabricius, 1798)
10	<i>Ceriagrion olivaceum</i> (Laidlaw, 1914)
11	<i>Enallagma parvum</i> (Selys, 1876)
12	<i>Ischnura aurora</i> (Brauer, 1865)
13	<i>Ischnura forcipata</i> (Morton, 1907)
14	<i>Mortonagrion aborensis</i> (Laidlaw, 1914)
15	<i>Onychargia atrocyana</i> (Selys, 1865)
16	<i>Pseudagrion microcephalum</i> (Rambur, 1842)
17	<i>Pseudagrion rubriceps</i> (Selys, 1876)
Sub-order-Anisoptera	
Family- Aeshnidae	
18	<i>Anax guttatus</i> (Burmeister, 1839)
19	<i>Gynacantha bainbriggei</i> (Fraser, 1922)
Family- Gomphidae	

20	<i>Actinogomphus angulosus</i> (Selys, 1854)
Family- Libellulidae	
21	<i>Aethriamanta brevipennis</i> (Rambur, 1842)
22	<i>Brachydiplax chalybea</i> (Brauer, 1868)
23	<i>Brachydiplax farinosa</i> (Kruger, 1902)
24	<i>Brachydiplax sobrina</i> (Rambur, 1842)
25	<i>Brachythemis contaminata</i> (Fabricius, 1793)
26	<i>Crocothemis servilia</i> (Drury, 1770)
27	<i>Diplacodes nebulosa</i> (Fabricius, 1793)
28	<i>Diplacodes trivialis</i> (Rambur, 1842)
29	<i>Neurothemis fulvia</i> (Drury, 1773)
30	<i>Neurothemis intermedia</i> (Rambur, 1842)
31	<i>Orthetrum glaucum</i> (Brauer, 1865)
32	<i>Orthetrum sabina</i> (Drury, 1770)
33	<i>Pantala flavescens</i> (Fabricius, 1798)
34	<i>Potamarcha congener</i> (Rambur, 1842)
35	<i>Rhodothemis rufa</i> (Rambur, 1842)
36	<i>Rhyothemis variegata</i> (Linnaeus, 1763)
37	<i>Tholymis tillarga</i> (Fabricius, 1798)
38	<i>Tramea basilaris burmeisteri</i> (Kirby, 1889)
39	<i>Trithemis pallidinervis</i> (Kirby, 1889)
40	<i>Urothemis signata</i> (Rambur, 1842)
41	<i>Zyxomma petiolatum</i> (Rambur, 1842)

The Eco Club Unit:

Eco Club, M.C. College unit has been organizing various programmes and plantation drives in order to create awareness among the students and teaching faculty of M.C. College and also students of other institutions.

Educational talk on “Effect of plastics on environment and wildlife” was organized on 5th of December, 2019 by Eco Club, M.C. College unit at St. Teresa English Medium School, Barpeta.



An awareness cum bird watching programme was organised by the Department of Zoology, M.C. College, Barpeta on 7th of December 2019.

Identification of birds, their habit and habitats, behaviour like nesting and migration etc were discussed in the programme.



On 15th of October, 2020 a talk was delivered by Prof. Tridip Baruah. He discussed about various prospects in the field of environment including research. Students of M.C College, Barpeta participated in the programme. A plantation drive of fruits and medicinal plants was also conducted in the College campus on that day.



In order to increase the awareness among students on the pollution of the environment by vehicular transport, Eco Club of M.C. College, Barpeta unit in collaboration with the District Transport Office, Barpeta organized an awareness camp cum pollution testing drive on 18th of December, 2020 at the M.C. College campus. The programme was honoured by the gracious presence of the eminent resource persons including Mr. Himangshu Das, District Transport Officer, Barpeta, Dr. Tirthanath Sharma, Joint Health Director, Barpeta, Mr. Nirupam Hazarika, Additional S.P, Barpeta, Mr. Sabyasachi Kashyap, ADC Barpeta and Dr. Prakash Sharma, Principal, M.C, College, Barpeta.



In commemoration with the central government's scheme to celebrate the 75th anniversary of Independence as “Azadi Ka Amrit Mahotsav”, and as per the instruction of Assam Science Technology and Environment Council (ASTEC), the iconic week (4th to 10th October, 2021) was celebrated by the Eco Club, M.C. College, Barpeta in collaboration with the College Environment and Climate Cell, M.C. College, Barpeta on 8th of October, 2021. A Plantation Drive and a Webinar was organised on the topic ‘Wetlands and the fate of Waterbirds in Assam’. Dr. Jaydev Mandal, Asst. Professor, Dept. of Zoology M.C. College, Barpeta was invited as the resource person to deliver the talk.



Azadi Ka Amrit Mahotsav
National Webinar
on
'WETLANDS AND THE FATE OF WATERBIRDS IN ASSAM'

Inaugurator
Dr. Prakash Sharma
Principal
M.C. College, Barpeta

Resource Person
Dr. Jaydev Mandal
Asst. Professor, Dept. of Zoology
M.C. College, Barpeta

Date: 8th October, 2021
Time: 1:00 PM

Organized by: Eco Club, M.C. College, Barpeta
in Collaboration with
College Environment and Climate Cell, M.C. College, Barpeta

Registration Free
E-Certificate
will be provided

Platform:
Google Meet

“Draw a bird day” was organised on 8th of April, 2022, where students participated on an Extempore speech programme organised by the Eco Club M.C. College, unit.



Plantation drive was also organised on 5th of June, 2021 on the day of World Environment Day.



Through these programmes the Eco Club unit of M.C. College has been trying constantly to create awareness among the students of the college towards the environment and develop a caring attitude towards it.

Drinking water, water use and management in the campus:



There are several sources of water in the college campus including tube well, groundwater extracted from deep bore wells using external and submersible water pumps and pond. However, the deep earthed water, being the principal source of drinking water, is stored in large tanks separately in each of the individual buildings. Both boys' and girls' hostels have separate groundwater extracting and storage plants. The stored water is purified by using recommended water purifying plants for drinking purpose. A rain water harvesting plant is also being installed close to the building of the department of Zoology and Botany which is expected to be functional shortly (**Table 7 & 8**).

Rain-water harvesting: A rain water harvesting plant is installed adjacent to the Department of Zoology. The plant is equipped with two-way outlet system; one is to supply water to the medicinal plant garden and another is



to the laboratories of the Zoology department. The plant is composed of a large water tank with a capacity of 1000 liter connected with inlets of rain water and two-way outlet system.



Water quality of the college campus has been assessed by Enviro-Testing-Services (Accredited by SPCB Assam, ISO 9001, ISO 45001, MSME) Bijoy Nagar, House No – 35, Noonmati, Guwahati -781020, Assam. The assessment record has been presented as follows:

Table 7: Methodology along with respective standards

S/N	Parameters	Test Methods	IS-10500
1	Odour	APHA 20 th Edition, 2150 B	Unobjectionable
2	Temperature (°C)	Thermometry Method	50
3	Turbidity (NTU)	APHA 20 th Edition, 2130B	5
4	pH	APHA 20 th Edition, 4500-H+B	6.5 – 8.5
5	Conductance (mS/cm)	APHA 20 th Edition, 2510B	-
6	Total Dissolved Solid	APHA 20 th Edition, 2540 B	500
7	Total Suspended Solid	APHA 20 th Edition, 2540 B	-
8	Chloride (mg/L)	APHA 20 th Edition, 4500-Cl-	250
9	Residual Chlorine (mg/L)	APHA 20 th Edition, 4500-Cl-B	0.2
10	Sulphates as SO ₄ (mg/L))	APHA 20 th Edition, 4500-SO ₄ ²⁻	250
11	Nitrate (mg/L)	APHA 20 th Edition, 4500-NO ₃ -	45
12	Fluoride (mg/L)	APHA 20 th Edition, 4500-F ⁻ D	1
13	Calcium (mg/L)	APHA 20 th Edition, 3500 B	75
14	Magnesium (mg/L)	APHA 20 th Edition, 3500 B	-
15	Iron (mg/L)	APHA 20 th Edition, 3111 B	0.3
16	Manganese	APHA 20 th Edition, 3111 B	0.1
17	Zinc	APHA 20 th Edition, 3111 B	5
18	Arsenic	APHA 20 th Edition, 3112 B	0.01
19	Total Coliform (MPN/100 mL)	APHA 20 th Edition, 3111 B	0
20	Faecal Coliform (MPN/100 mL)	APHA 20 th Edition, 9221 E	0

Table 8: Result of water testing

S/N	Parameters	Unit	DW1	DW2	DW3
1	Odour	--	NS	NS	NS
2	Temperature (°C)	°C	22	22	22
3	Turbidity (NTU)	NTU	0.6	0.6	0.8

4	pH	-	7.1	7.1	7.2
5	Conductance (mS/cm)	mS/cm	0.42	0.62	0.48
6	Total Dissolved Solid (mg/L)	mg/L	68.0	64.0	66.0
7	Total Suspended Solid (mg/L)	mg/L	24.0	28.0	31.0
8	Chloride (mg/L)	mg/L	24.1	26.2	24.1
9	Residual Chlorine (mg/L)	mg/L	<0.01	<0.01	<0.01
10	Sulphates as SO ₄ (mg/L))	mg/L	8.8	8.7	9.2
11	Nitrate (mg/L)	mg/L	4.8	6.4	7.1
12	Fluoride (mg/L)	mg/L	0.16	0.13	0.12
13	Calcium (mg/L)	mg/L	24.6	21.6	26.8
14	Magnesium (mg/L)	mg/L	26.3	22.3	28.1
15	Iron (mg/L)	mg/L	0.18	0.12	0.13
16	Manganese	mg/L	0.006	0.004	0.006
17	Zinc	mg/L	0.08	0.06	0.08
18	Arsenic	mg/L	<0.001	<0.001	<0.001
19	Total Coliform (MPN/100 mL)	mg/L	03	03	03
20	Faecal Coliform (MPN/100 mL)	mg /L	NIL	NIL	NIL

Air quality in the campus:

Air quality of the college campus has been assessed by Enviro-Testing-Services (Accredited by SPCB Assam, ISO 9001, ISO 45001, MSME) Bijoy Nagar, House No – 35, Noonmati, Guwahati -781020, Assam. The assessment record has been presented as follows (**Table 9**):



Table 9: Result of the air quality test

AMBIENT AIR QUALITY						
Duration (24 Hour)			Average			
S/N	Parameters	Unit	Concentration	Limit	Weather Condition*	Test Method

1	Particulate Matter (PM10)	µg/m ³	72.4	100	Clear	IS5182(23)
2	Particulate Matter (PM2.5)	µg/m ³	46.2	60		CPCB Guideline
3	Sulphur Dioxide (SO ₂)	µg/m ³	14.2	80		IS5182(2)
4	Nitrogen Dioxide(NO ₂)	µg/m ³	16.8	80		IS5182(vi)
5	Pb in PM 10	µg/m ³	<0.2	1.0		IS5182(vi)
6	Pb in PM2.5	µg/m ³	<0.2	1.0		IS5182(vi)
7	Ni in PM10	ng/m ³	2.2	20		IS5182(vi)
8	Ni in PM2.5	ng/m ³	<2.0	20		IS5182(vi)
9	As in PM10	ng/m ³	BDL	06		IS5182(vi)
10	As in PM2.5	ng/m ³	BDL	06		IS5182(vi)

Noise level in the campus:

Ambient noise quality of the college campus has been assessed by Enviro-Testing-Services (Accredited by SPCB Assam, ISO 9001, ISO 45001, MSME) Bijoy Nagar, House No – 35, Noonmati, Guwahati -781020, Assam. The assessment record has been presented as follows (**Table 10**):



Table 10: Ambient noise quality of the college campus

S/N	Locations	GPS Co-ordinate		Daytime SPL(dB) [6 am to 10 pm]		CPCB Limit SPL(dB)
				Leq	Range	
1	College Main Gate	N26°19'36.4"	E091°00'06.9"	68.5	55 – 72	
3	Principal Office	N26°19'38.5"	E091°00'04.7"	64.2	58 – 71	

4	Play Ground	N26°19'38.3"	E091°00'07.3"	52.2	45 – 62
5	Near Chemistry Department	N26°19'38.5"	E091°00'05.3"	56.1	49 – 66
6	Near Physics Department	N26°19'37.9"	E091°00'01.7"	56.8	49 - 69
6	Near Zoology Department	N26°19'43.6"	E091°00'00.7"	61.3	46 - 63
7	Boy's Hostel	N26°19'39.7"	E091°00'01.9"	61.4	39 - 65
8	Girls Hostel	N26°19'41.0"	E091°00'01.6"	58.1	43 – 67

75

Soil quality of the college campus:

Soil is the principal substratum for all living organisms. Soil determines the vegetation type of an area. Physicochemical properties of soil directly influence the biodiversity of an area. The soil condition of the college campus has been assessed by Enviro-Testing-Services (Accredited by SPCB Assam, ISO 9001, ISO 45001, MSME) Bijoy Nagar, House No – 35, Noonmati, Guwahati -781020, Assam. The assessment record has been presented as follows (**Table 11**):



Table 11: Study of soil quality in the college campus

S/N	Parameters	[S1]	[S2]	[S3]
1	PH (1: 2)	8.1	7.8	8.2
2	Conductance (ms)	0.36	0.23	0.26
3	Sand (%)	87.0	84.6	83.4
	Silt (%)	1.04	3.01	0.06
	Clay (%)	11.9	12.4	16.6
4	Water Holding Capacity (%)	41.3	46.1	48.3
5	Bulk Density (gcm ⁻³)	1.2	1.1	1.3
6	Cation Exchange capacity (meq/kg)	0.28	0.26	0.27
7	Nitrogen (%)	0.06	0.08	0.07
8	Potassium (mg/kg)	16.2	12.8	17.4
9	Sodium (mg/kg)	23.6	26.1	21.2
10	Calcium (g/kg)	18.3	16.6	19.6

Math	08	-	-	-	13	-	-	-	-	01	01	-	-	01
Asm	01	-	-	-	02	-	-	-	-	01	01	-	-	03
Comp	10	-	-	-	09	-	-	-	-	18	01	-	-	-
Anth	-	27	-	-	10	-	-	01	-	01	-	-	-	-
Edu	08				10									1,1,6
Hist	01	-	-	-	01	-	-	-	-	-	-	-	-	-
Geo	-	18	08	-	-	-	-	-	-	-	-	-	-	-
Lib	12	39	-	-	24	06	-	-	-	20	01	-	-	1,1,1
MHos	26	-	02	-	29	-	-	-	-	-	-	-	01	01
WHos	11			122	57				02				03	6+1
Office	04	05	00	22	08	02	03	00	00	04	04	01	01	02

The average unit consumption against all the electrical appliances in the college has been estimated to be 3409.933 KWh. (Annexure-II). College authority has, however, initiated steps to harvest the green energy. As a part of that, six numbers of solar panels have been installed with an attached battery of 12 volt in each. Six numbers of electric bulbs are being lightened in six different convenient locations in the college campus. College authority is also planning to extend solar power to a number of electrical inputs within this year.



Generation of waste materials and waste disposal system:



A variety of waste materials is found to be generated by the activity of different departments, college offices, canteens and students. The departments along with the office, canteen and students generate a number of biodegradable and non-degradable wastes. The waste materials are generally collected in the dustbins separately and being disposed in the municipality garbage dumping ground. However, the college authority is planning to install some efficient waste management plants in the campus itself. As a part of that initiative, the college authority has been taking initiative for a MoU with the renowned innovator **Padmashree Dr. Uddhab Bharali** with an aim to install a non-degradable waste disposal plant. The authority has also taken initiative to install the vermicompost plant in collaboration with the PG Department of Botany of the

college. Following table (Table 12) depicts different types of wastes and their management system.

Table 12: Generated wastes and their management

Source of Waste	Biodegradable waste	Non-degradable waste (solid & liquid)	Disposal system
Department of Botany	Plant parts, paper, tea residues, fallen leaves, wood etc.	Glass particles, chemical residues, packaged materials, polythene bags, used pen, pencil, glass/board markers, battery, chalk-pencils etc.	Biodegradable suitable wastes are mixed with the soil of planted pots, others are collected in the separate dustbins.
Department of Zoology	Animal parts, paper, tea residues, fallen leaves, wood etc.	Glass particles, chemical residues, packaged materials, polythene bags, used pen, pencil, glass/board markers, battery chalk-pencils etc.	Biodegradable and non-degradable wastes are collected separately.
Department of Physics	Plant parts, fallen leaves are being collected and dumped in pit for biodegradation. Old papers are archived at the department for official record.	Glass particles, chemical residues, packaged materials, polythene bags, used pen, pencil, glass/board, markers are dumped in separate dustbin. Batteries are being sent for recycling.	Separate dustbins are used for biodegradable and non-degradable wastes.
Department of Chemistry	Packaged materials, chalk-pencils etc.	Glass particles, chemical residues, packaged materials, polythene bags, used pen, pencil, glass/board, markers are dumped in separate dustbin. Batteries are being sent for recycling.	Separate dustbins are used for biodegradable and non-degradable wastes.
Department of Mathematics	Chalk-pencil, tea residues, fallen leaves, wood etc.	Glass particles, packaged materials, polythene bags, used pen, pencil, glass/board, computer hardware parts etc.	Separate dustbins are used for biodegradable and non-degradable wastes.
Department of Computer Science	Chalk-pencil, tea residues, fallen leaves, wood etc.	Glass particles, packaged materials, polythene bags, used pen, pencil, glass/board, computer hardware parts etc.	Separate dustbins are used for biodegradable and non-degradable wastes.
Department of Political Science	Plant parts, paper, tea residues, fallen leaves,	Glass particles, packaged materials, polythene bags,	Biodegradable and non-

	wood etc.	used pen, pencil, glass/board markers, battery, chalk-pencils etc.	degradable wastes are collected separately.
Department of Philosophy	Plant parts, paper, tea residues, fallen leaves, wood etc.	Glass particles, packaged materials, polythene bags, used pen, pencil, glass/board markers, battery, chalk-pencils etc.	Biodegradable and non-degradable wastes are collected separately.
Department of Assamese	Plant parts, paper, tea residues, fallen leaves, wood etc.	Glass particles, packaged materials, polythene bags, used pen, pencil, glass/board markers, battery, chalk-pencils etc.	Biodegradable and non-degradable wastes are collected separately.
Department of Economics	Plant parts, paper, tea residues, fallen leaves, wood etc.	Glass particles, packaged materials, polythene bags, used pen, pencil, glass/board markers, battery, chalk-pencils etc.	Biodegradable and non-degradable wastes are collected separately.
Department of Geography	Plant parts, paper, tea residues, fallen leaves, wood etc.	Glass particles, packaged materials, polythene bags, used pen, pencil, glass/board markers, battery, chalk-pencils etc.	Separate dustbins are used for biodegradable and non-degradable wastes.
Department of Education	Plant parts, paper, tea residues, fallen leaves, wood etc.	Glass particles, packaged materials, polythene bags, used pen, pencil, glass/board markers, battery, chalk-pencils etc.	Biodegradable and non-degradable wastes are collected separately.
Department of Anthropology	Paper, tea residues, cotton, cotton cloths etc.	Glass particles, packaged materials, polythene bags, used pen, pencil, battery etc.	Collected in the dustbins.
Department of History	Paper, tea residues etc.	Packaged materials, polythene bags, used pen, pencil, glass/board markers, chalk-pencils etc.	Separate dustbins are used for biodegradable and non-degradable wastes.
Department of English	Plant parts, paper, tea residues, fallen leaves, wood etc.	Glass particles, packaged materials, polythene bags, used pen, pencil, glass/board markers, battery, chalk-pencils etc.	Biodegradable and non-degradable wastes are collected separately.
Kameswar Das Library	Plant debris, paper, tea residues, fallen leaves, wood pieces etc.	Glass particles, packaged materials, disposable plastic glass, plates and cups, polythene bags,	Biodegradable and non-degradable wastes are

		used pen, pencil, glass markers, battery, Printer and photostat machine parts, printer's cartridge, other debris etc.	collected separately.
College Office	Paper, tea residues, fallen leaves, wood, disposable paper glass and cups, other debris etc.	Glass particles, packaged materials, disposable plastic glass, plates and cups, polythene bags, used pen, pencil, glass markers, battery, Printer and photostat machine parts, printer's cartridge, other debris etc.	Biodegradable and non-degradable wastes are collected separately.
Canteen	Tea residues, fallen leaves, wood, disposable paper glass and cups, soup, uncooked and cooked residues, other debris etc.	Packaged materials, disposable plastic glass, plates and cups, polythene bags, other debris etc.	Biodegradable and non-degradable wastes are collected separately.
Café cum Photostat stall	Tea residues, fallen leaves, wood, disposable paper glass and cups, soup, processed and unprocessed tea-coffee items, snacks residues, other debris etc.	Packaged materials, disposable plastic glass, plates and cups, polythene bags, other debris etc.	Biodegradable and non-degradable wastes are collected separately.
Students related	Paper, snacks residues, other debris etc.	Disposable water bottle, packets of food items, polythene bags, used pen, pencil, glass markers, battery, other debris etc.	Generally found scattered but periodically collected and disposed properly by the college authority.
Construction sites	Cement, sand etc.	Cement bags, polythene bags, iron, tin and other residual materials.	Generally found scattered but periodically collected and disposed properly by the college authority.

E-waste management:

The Physics and Computer science department of the College generate damaged or obsolete electronic devices which are disposed through authorised vendors available in Barpeta town. The E waste is segregated in the respective department by providing separate store room. The local vendor collect the E waste and the college authority receive some money by selling them. Therefore the college authority is disposing the obsolete computers, damaged electrical and electronic parts by selling. The ink cartridges are refilled.

Cleanliness practices:

The college authority has been paying much of its efforts to maintain its terrestrial and aquatic environment clean. As a measure of that practice, the NSS and NCC cadets are made engaged to clean the campus. As a part of the Social Service, the Social



Service Secretary of the Students' Union Body also engage a number of students to clean the campus. Apart from these routine practices, a few cleanliness drives keeping pace with some National level programmes like *Swach Bharat Abhiyan*, *Swachhta Samaroh* etc. are also organised in the college periodically.

Best Practices:



Maintaining the medicinal plant garden



Maintaining the vermicompost plant



Fox conservation centre



**Solid waste disposal
plant (chimney)**



Plantation scheme

Suggestions:

1. E-waste audit should be quantified with a minimization plan in future.
2. Number of tree species may be quantified and be included in the next phase. Students may be involved in assessing carbon sequestration in the campus.
3. In the next phase, measures taken to minimise energy use and outcome may be included.
4. Audit of water use in various departments, office and hostels should be reflected in the next time.

Acknowledgement:

The Green Audit Committee is thankful to all the teachers and other employees of the college for their kind cooperation during field survey and data collection. The committee is grateful to Mr. Mukul Uzir, LDA, College office for his helping hand during compilation and final assessment of the report. Thanks also go to the students of different semesters within the period 2021-22 for their support and necessary cooperation during field survey and preparation of the report. The committee members and the college authority will remain always grateful to Dr. Jaydeep Baruah, Head of the Environment division, Assam Science Technology and Environment Council, Guwahati, Assam for his visit to the college and valuable suggestions regarding maintenance of the green environment.

ANNEXURES

Annexure-I

GOVERNMENT OF ASSAM
OFFICE OF THE CIRCLE OFFICER::: BARPETA REVENUE CIRCLE,
BARPETA.


No. 673

Dated :- 26/02/2016



TO WHOM SO EVER IT MAY CONCERN

This is to certify that a plot of land measuring 27 bigha 3 katha 6 lessa and 20 bigha covered by Dag No. 225 & 226 respectively and Short lease patta No. 30 of Barpeta Town under Barpeta Mouza is standing in the name of Madhab Choudhury College, Barpeta as per existing land record and report obtained from the recorder of this office.


Circle Officer,
Barpeta Revenue Circle,
Barpeta

Barpeta Revenue Circle,
Barpeta



GOVERNMENT OF ASSAM

OFFICE OF THE CIRCLE OFFICER::: BARPETA REVENUE CIRCLE,
BARPETA.

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Barpeta Revenue Circle,
Barpeta



GOVERNMENT OF ASSAM
OFFICE OF THE CIRCLE OFFICER::: BARPETA REVENUE CIRCLE,
BARPETA.

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Circle Officer,
Barpeta Revenue Circle,
Barpeta


Barpeta Rev. Circle
Barpeta

Annexure-II



Assam Power Distribution Company Limited

NAME OF ELECTRICAL SUB-DIVISION / RICA / RICA BARPETA

CIR: UR0109AS200350087242

O/SER: 18AARCS1254172J

ELECTRICITY BILL

Website: www.apdd.org

Centralized Customer Care Number: 1912

Consumer Name: PRINCIPAL M.C.COLLEGE Address: MC COLLEGE BARPETA, BARPETA	Consumer Number: 063060000003 Old Consumer Number: 6300000004 DTR Number: M101HDI1 Pole Number: 000 Connected Load in KW: 200.0 Contracted Demand in KVA: 75.0 Load Secality: 441825.430 Meter Number: X1470341	Bill Amount: 31676.500 Due Date: 20-Sep-2021 Bill Number: 900004500 Bill Period: 01-Aug-2021 To 31-Aug-2021 Bill Date: 05-Sep-2021 Number of Days: 31 Meter Status: RUNNING Billing Status: NORMAL
Contact Number: 9430024357 Email: info@apdd.com Tariff Category: HT IV BULK SUPPLY (GOVERNMENT EDUCATION) Supply Voltage Level: HT	 063000000003	

Meter Reading Details

Reading Type	Meter Number	MP	Previous Reading in KWh	Previous Export in KWh	Current Reading in KWh	Current Export in KWh	Difference Reading in KWh	Difference Export in KWh
KBH(Normal)	X1470341	200.0	33,200	0.000	48,580	0.000	15,380	0.000

Units Consumed	PF Penalty/Rebate	LT Metering Penalty	DTR Penalty	HT Rebate	Voltage Rebate	Voltage Penalty	Rebate Units in KWh	
Normal 30276.000	-31.880	32.280	0.000	0.000	0.000	0.000	3136.800	
Recurrent Demand (in KVA)	0.03	Maximum Demand (in KVA)		6.0	Billing Demand (in KVA)	75.0	Average Power Factor	93.5
Power on Hours	744.0	Availability Percentage						

Billing Details

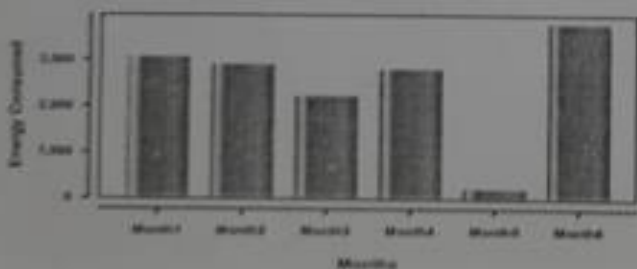
Current Demand	Outstanding Amount	Adjustment Amount	Solar Rebate	Net Bill Amount
Rs. 31676.460	Rs. 0.000	Rs. 0.000	0.00	Rs. 31676.000

In Words: Rupees Thirty One Thousands Six Hundred Seventy Six Only

PLEASE PAY YOUR BILL ON TIME AND HELP US TO SERVE YOU BETTER

Charges Breakup			
Details	Units	Rate	Amount
Energy Charge(Normal)	3136.800	6.400	20031.070
Total Energy Charge			20031.07
Energy Charge Re-Estimated			0.000
Roofing Solar Adjustment			0.00
Demand/Fixed Charge (KVA)	75.0	130.0	9876.99
Electricity Duty			1928.4
Govt. Subsidy	0.0		0.0
Overdrawal Penalty			0.0
Meter Rent	0.0		0.0
Charges for dishonoured cheques			0.0
Arrear Principal			0.000
Arrear Surcharge			0.000
Current Surcharge			0.000
Adjustment Amount			0.000
Rebate if paid before due date			0.00
Payable amount before due date			31676.00
Payable amount after due date			31676.00

Energy Consumption (Last Month's Bill)



Checked by E&OE:

Prepared by: 40003994

Signature with seal

(Handwritten signatures)



Assam Power Distribution Company Limited

NAME OF ELECTRICAL SUB-DIVISION / IRCA : IRCA BARPETA

CIN : U40109AS20035GC007242

GSTIN : 18AABCL1354J1ZJ

ELECTRICITY BILL

Website: www.apdcl.org

Centralized Customer Care Number: 1912

Consumer Name: PRINCIPAL M.C.COLLEGE Address: MC COLLEGE BARPETA, BARPETA	Consumer Number: 063000000003 Old Consumer Number: 52000000904 DTR Number: M101HDU1 Folio Number :000 Contracted Load in KW: 200.0 Contracted Demand in KVA: 75.0 Load Security: 441825.430 Meter Number: X1476341	Bill Amount: 34349.000 Due Date: 21-Oct-2021 Bill Number: 500005433 Bill Period: 01-Sep-2021 To 30-Sep-2021 Bill Date: 06-Oct-2021 Number of Days: 30 Meter Status: RUNNING Billing Status: NORMAL
Contact Number : 9435024357 Email : info@mccasam.org Tariff Category: HT IV BULK SUPPLY (GOVERNMENT EDUCATION) Supply Voltage Level: HT		



Meter Reading Details

Reading Type	Meter Number	MF	Previous Reading in KWh	Previous Export in KWh	Current Reading in KWh	Current Export in KWh	Difference Reading in KWh	Difference Export in KWh
KWh(Normal)	X1476341	200.0	43.070	0.000	69.290	0.000	20.710	0.000

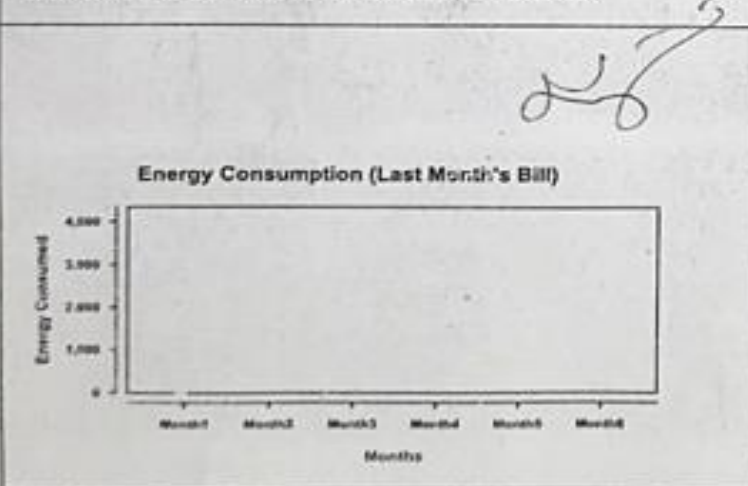
Units Consumed	PF Penalty/Rebate	LT Metering Penalty	DTR Penalty	HT Rebate	Voltage Rebate	Voltage Penalty	Billable Units in KWh	
Normal 4142.000	-85.330	124.200	0.000	0.000	0.000	0.000	4180.940	
Recorded Demand (in KVA)	0.1		Maximum Demand (in KVA)	19.0	Billing Demand (in KVA)	75.0	Average Power Factor	96.0
Power on Hours	720.0				Availability Percentage			

Billing Details

Current Demand	Outstanding Amount	Adjustment Amount	Solar Rebate	Net Bill Amount
Rs. 38412.660	Rs. 0.000	Rs. -4063.550	0.00	Rs. 34349.000

LS interest of Rs. 4063.55 and Load Security Rs. 0.0 has been adjusted for FY 2020-2021. In Words: Rupees Thirty Four Thousands Three Hundred Forty Nine Only

PLEASE PAY YOUR BILL ON TIME AND HELP US TO SERVE YOU BETTER



Charges Breakup			
Details	Units	Rate	Amount
Energy Charge(Normal)	4180.940	6.450	26967.060
Total Energy Charge			26967.06
Energy Charge Re-Estimated			0.000
Roof-top Solar Adjustment			0.00
Demand/Fixed Charge (KVA)	75.0	130.0	9615.43
Electricity Duty			1829.17
Govt. Subsidy		0.0	0.0
Overdrawal Penalty			0.0
Meter Rent		0.0	0.0
Charges for dishonoured cheque			0.0
Arsenal Principal			0.000
Arsenal Surcharge			0.000
Current Surcharge			0.000
Adjustment Amount			4063.550
Rebate if paid before due date			0.00
Payable amount before due date			34349.00
Payable amount after due date			34349.00

Checked by E&OE:

Prepared by: 40003994

Signature with seal

Handwritten signature