

# **GREEN AND ENVIRONMENT AUDIT REPORT**

**[2021 – 2022]**

**FOR**



**R G BARUAH COLLEGE, GUWAHATI-781025, ASSAM, INDIA**



**By**  
**CHEMICAL AND ENVIRONMENTAL**  
**RESEARCH AND TECHNOLOGY INNOVATION SOCIETY (CERTIS),**  
**PADUMBARI, KETEKI PATH, GUWAHATI-781011**



**Estd: 2017**

# **CERTIS**

**REGISTRATION NUMBER: KAM(M)/263/P/176 OF 2017-2018**

**CHEMICAL AND ENVIRONMENTAL RESEARCH AND TECHNOLOGY  
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*Our special thank goes to Dr. Arup Kumar Bora , Department of Mathematics of R G Baruah College for coordinating the issues and giving us the necessary information related to this study.*

*We also convey our sincere thanks to Mr. Rupam Hazarika, Co-ordinator, IQAC, R G Baruah College, for his support and cooperation.*

*We are also thankful to other staff members who were actively involved while collecting the data and conducting field survey*

Date

Bijoy S Goswami  
Secretary, CERTIS



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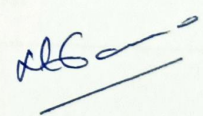
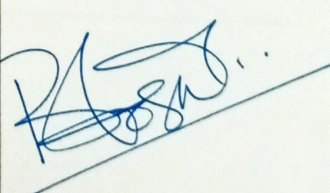
CERTIS/RGBC/GEAR/2021- 2022/001

20<sup>th</sup> April 2022

## Completion Certificate

*This is a report compiled on the basis of field survey and field investigation of various environmental components such as Ambient Air Quality, Noise Quality, Drinking Water Quality, Soil Quality, Carbon Footprint along with Flora and Fauna. The present work was carried out at the request of the Principal, R G Baruah College. The findings of the study carried out during the period of November 2021 to March 2022 are presented in this report.*

### Seal and Signature of the Green Audit Team

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## **1.0 Introduction of the Institute**

### **1.1 Brief Introduction**

R. G Baruah College was established in the year 1978 in the name of Radha Govinda Baruah , an enterprising person and was the founder of The Assam Tribune, one of the prestigious News paper of India.

Established in 1978 with the noble aim of carrying the light of education to the marginalized sections of society, particularly in the Fatasil Ambari area of Guwahati city, R.G.Baruah College still stands committed to the ideal upon which it was founded. In the beginning of its journey, the college catered largely to the underprivileged students, most of whom were first generation learners. Even today the majority of students belong to the educationally and financially disadvantaged group. Be that as it may, the college, in keeping with its vision, has tirelessly endeavored to help these students not only in pursuance of their academic pursuits but also in fulfilling their social responsibilities.

Over the years the college has been able to carve a niche for itself among the higher educational institutions of Guwahati. Students with poor to modest academic careers have shown marked improvement in their results in the undergraduate level. Their expectations are no longer just to pass examinations but to excel in them. So much so that in recent times almost all the departments have been able to produce students securing first class. They have gone on to realize their potential by working in various government and private organizations. Many of them have also excelled in the professional world by virtue of their entrepreneurial spirit.

The role played by the faculty of the college in giving shape to the life and career of the underprivileged students cannot be stressed enough. With great passion and patience, the teachers have been successful in drawing out the latent talents and abilities of the students. They make themselves accessible to students at all times, helping them with extra classes whenever needed. Financially weaker students have also been helped by providing them with books and other learning resources. Besides academics, these students have also been familiarized with various social issues by conducting regular awareness programmes and activities in and outside the campus. Cultivation of moral and social values among its students is another core area of concern in the college. Value-oriented programmes are periodically held for the benefit of students. Students of the institution thus demonstrate social commitment and moral uprightness.



Thus, students of the disadvantaged sections of society with weak educational and financial background who are admitted in large numbers in the college are not made to feel insecure or inferior to anyone else. Inclusiveness has always been in the foreground in the institution’s plans for the future. The students have also responded in a positive manner by inculcating the values of hard work, sincerity and fellow feeling. The outcomes are conspicuous for everyone to see. What stands R.G.Baruah College apart from most educational institutions is its feeling of camaraderie amongst the students, teachers, staff and administration—irrespective of caste, creed or economic status.

**1.2 Location of the College Campus**

Location : Urban  
 Campus Area : 3.55 Acres  
 Built Up Area : 4676 Sq. mtrs

**1.3 Physical Structure**

Total Number of Department	12
Auditorium	✓
Hostel	✓
Cafeteria	✓
Open Stage	✓
Conference Hall	✓
Libraries	✓
Yoga room	✓
Computer Lab	✓

**1.4 Student, Teacher & Employees Strength**

Total No of Students : 2000  
 Total No of Teachers : 44  
 Total No. of Employees : 18

**2.0 Brief Outlines of Green Audit**

Green Audit is a process of systematic identification, quantification, recording, reporting and analysis of components of environmental diversity of organization. It aims to analyse environmental practices within and outside of the concerned place, which will have an impact on the eco-friendly atmosphere.

Green audit is a valuable means for a college to determine how and where they are using the most energy or water or other resources; the college can then consider how to implement changes and make savings. It can create health consciousness and promote environmental awareness, values and ethics. It provides staff and students better understanding of Green impact on campus. If self-enquiry is a natural and necessary outgrowth of a quality education, it could also be stated that institutional self-enquiry is a natural and necessary outgrowth of a quality educational institution. Thus it is imperative that the college evaluate its own contributions toward a sustainable future. As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more predominant. The rapid urbanization and economic development at local, regional and global level has led to several environmental and ecological crises.

On this background it becomes essential to adopt the system of the Green Campus for the institutes which will lead for sustainable development and at the same time reduce a sizable amount of atmospheric CO<sub>2</sub> from the environment. The National Assessment and Accreditation Council, New Delhi (NAAC) has made it mandatory that all Higher Educational Institutions should submit an annual Green Audit Report. Moreover, it is part of Corporate Social Responsibility of the Higher Educational Institutions to ensure that they contribute towards the reduction of global warming through carbon footprint reduction measures.

### **3.0 Objective of Green Audit**

- (i) Landuse & Built-up Environment
- (ii) Geographical Location with Campus Map
- (iii) Present status of Ambient air, Noise, Soil quality and Water quality
- (iv) Floral and Faunal diversity
- (v) Management Practices with respect to Water, Waste and Energy
- (vi) Carbon footprint
- (vii) Organizational Level Efforts

### **4.0 Methodology**

Methodology includes

- (i) Physical inspection of the campus
- (ii) Collection of Primary & Secondary Data
- (iii) Observation and review of the documentation
- (iv) Data analysis

## 5.0 Objective wise Analysis

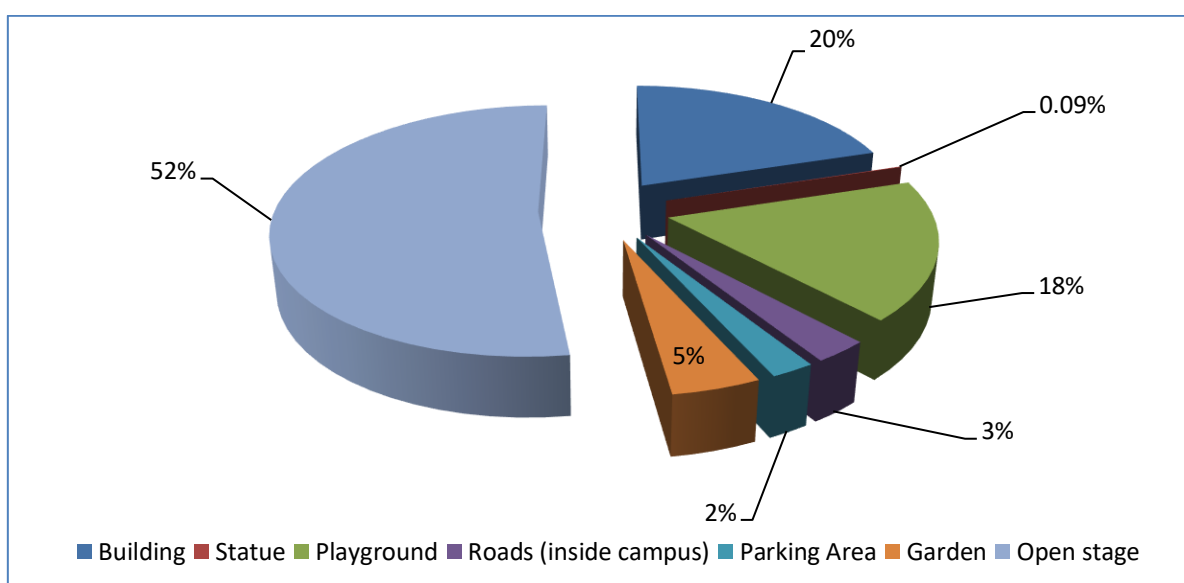
### 5.1 Landuse & Built-up Environment

The college has a free campus spread over 3.55 acre of land in the heart of the Guwahati City. A total of seven land use / land cover classes have been demarcated in the study area. It consist of 23057 sq.m of total area out of which Building cover 50.5%, Statue covers 0.08%, playground covers 6.2%, Road inside the college campus covers 6.8%, various tree covers 4.3% , vehicle parking area covers 2.3%, Garden area covers 3.3% and open space covers 26.5%.

The area coverage of different landuse classes is shown in Table 1. The graphical presentation of various landuse classes is shown in Fig.1.

**Table 1: The area coverage of different land use classes**

Features	Area (in sq. m.)
Building	4647
Statue	20
Playground	4112
Roads (inside campus)	662
Parking Area	520
Garden	1050
Open stage	12046
Grand Total	23057



**Fig1: Various land use classification at R G Baruah College campus**



## 5.2 Geographical Location with Campus Map

Guwahati is the principal city of the entire northeastern India and the capital city of Assam. Guwahati is located approximately along  $26^{\circ} 11'$  N latitude and  $91^{\circ} 45'$  E longitude. It is 54.75 m above the mean sea level, covering about 24 km in the East-West direction and about 9 km in the North-South direction. The mighty Brahmaputra flows along the Northern boundary of the city while the Southern and Eastern boundaries are made by a number of hill ranges, which are extensions of the Khasi Hills. The Jalukbari-Azara plain makes the Western boundary of the city. The master plan of the city also covers Amingaon and North Guwahati on the Northern side of the Brahmaputra. Structurally, this region is situated on the 50 m thick alluvium of the middle Brahmaputra valley. The city is situated on an outcrop of the stable rocky foundation of the Shillong Plateau. The city is the main corridor for passage to the states of Assam, Meghalaya, Mizoram, Tripura, Manipur, Nagaland and Arunachal Pradesh and all the roads, including the two highways NH31 and NH37 passing through the city, are busy with vehicular traffic day and night.

R G Baruah College is located in the heart of the Guwahati City, AK Dev Rd, Fatasil Ambari, Guwahati, Assam 781025 with GPS coordinate  $N26^{\circ}16'4.86''$  ;  $E091^{\circ}73'57.84''$ .

**Fig 2: Map of R G Baruah College campus**



**R G Baruah College Main Gate**



**Inside R G Baruah College**



**Administrative Block Cum Various Class Room**



**Various Plantation Inside the College Campus**



**Glimpses of R G Baruah College**

### 5.3 Present status of Ambient air, Noise & water quality

#### 5.3.1 Meteorological Study

The air environment of the study area covers climate, site specific micrometeorology and ambient air quality. It may be noted that the study was carried out for a short duration. In our onsite meteorological study reveals that the average temperature and humidity of the study area as recorded during the study period lies in the range of 21<sup>0</sup>C to 26<sup>0</sup>C and 74% to 78%. The pre-dominant wind direction is North East. The onsite monitoring for wind speed along different parameters are exhibited in Table 2.

**Table2 : Micro Meteorological Study at R G Baruah College**

S/N	Parameters	Metrological Data at R G Baruah College Date: 13.02.2022	
1	Temperature	Min	21
		Max	26
2	Relative Humidity	8.30am	74
		17.30pm	78
3	Wind Speed	8.30am	7.6
		17.30pm	8.4
4	Wind Direction	8.30am	NE
		17.30pm	NE

#### 5.3.2 Ambient Air Quality

The results obtained are presented in Tables 3. The monitoring was conducted on 24-hour basis as per standard procedure using Ecotech PM-10 & PM-2.5 with Gaseous Attachment. All the Ambient Air Quality meets the National Ambient Air Quality standards.

**Table 3: Results of Ambient Air Monitoring Station at R G Baruah College**

AMBIENT AIR QUALITY						
Sampling Station : R G Baruah College ( Near Block B)						
GPS Coordinate: N26°16'4.86" ; E091°73'57.84"						
Date: 13.2.22 to 14.2.22				Time of Installation: 9.30		
Duration (24 Hour)			Average			
S/N	Parameters	Unit	Concentration	Limit	Weather Condition*	Test Method
1	Particulate Matter (PM10)	$\mu\text{g}/\text{m}^3$	71.4	100	Clear	IS5182(23)
2	Particulate Matter (PM2.5)	$\mu\text{g}/\text{m}^3$	44.2	60		CPCB Guideline
3	Sulphur Dioxide (SO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	16.6	80		IS5182(2)
4	Nitrogen Dioxide(NO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	19.1	80		IS5182(vi)
5	Pb in PM 10	$\mu\text{g}/\text{m}^3$	<0.2	1.0		IS5182(vi)
6	Pb in PM2.5	$\mu\text{g}/\text{m}^3$	<0.2	1.0		IS5182(vi)
7	Ni in PM10	$\text{ng}/\text{m}^3$	2.1	20		IS5182(vi)
8	Ni in PM2.5	$\text{ng}/\text{m}^3$	<2.0	20		IS5182(vi)
9	As in PM10	$\text{ng}/\text{m}^3$	BDL	06		IS5182(vi)
10	As in PM2.5	$\text{ng}/\text{m}^3$	BDL	06		IS5182(vi)



### 5.3.3 Noise Quality study

In the present study, the noise level measurements were recorded using a precision sound level meter (Envirotech SLM100) with a measuring range between 0-150 dB. The instrument is calibrated before the measurements are recorded. The microphone was placed at 1.0 m from the facades of house, away from any reflecting surface and 1.2 m above the ground. In each location, adequate number of samples was taken at 10 minute intervals. The noise levels were recorded during day time and meteorological conditions: no wind no rain. The Noise Level Monitored (Table 4) and analyzed is found to be within the CPCB Prescribed Limit

**Table 4: Results of Noise Monitoring at R G Baruah College**

Date of Monitoring: 13.2.22				
S/N	Locations	Daytime SPL(dB) [ 6 am to 10 pm]		CPCB Limit SPL(dB)
		Leq	Range	
1	Near Main Gate	71.7	57 – 78	75
3	Administrative Block	68.8	58 – 74	
4	Corridor In front of various classes	66.2	56 – 74	
5	Near Girls Common Room	62.1	54 – 72	
6	Block A	65.4	59 – 68	
6	Near Block B	61.2	58 – 71	
7	Hostel Block	62.4	54 – 69	
8	Block C	63.8	56 – 74	
9	NCC Block	66.2	61 – 72	
10	Boys Common Room	66.6	59 – 72	



Noise & Air Quality Monitoring at Different locations of R G Baruah College



### 5.3.4 Drinking Water Quality

Drinking water samples were collected from R G Baruah College Administrative Block (DW1), R G Baruah College Common Student Drinking water facility (DW2) and Near R G Baruah College Girls Hostel (DW3). Results of analysis of the most relevant water quality parameters are given in Tables 5. The test method for all the parameters along with tolerance limit as suggested by IS-10500 is presented in Table 4. All the parameters are found to be within tolerance limit as suggested by IS: 10500.

Sr.No.	Sampling Locations	GPS Co-ordinate	
1	R G Baruah College Administrative Block (DW1)	N26°16'4.86"	E091°73'57.84"
2	R G Baruah College Common Student Drinking water facility (DW2)	N26°16'2.75"	E091°73'74.2"
3	Near R G Baruah College Girls Hostel (DW3)	N26°16'31.04"	E091°73'73.18"

**Table 5: Various Test Methods of Water Quality Monitoring at B Borooah College**

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

**Table 6: Results of Drinking Water Quality Monitoring at R G Baruah College**

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 <sub>4</sub> (mg/L))	mg/L	8.8	8.7	9.2
11	Nitrate (mg/L)	mg/L	4.8	6.4	9.1
12	Fluoride (mg/L)	mg/L	0.16	0.13	0.16
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	0.08	0.12	0.13
16	Manganese	mg/L	0.002	0.002	0.003
17	Zinc	mg/L	0.04	0.02	0.06
18	Arsenic	mg/L	<0.001	<0.001	<0.001
19	Total Coliform (MPN/100 mL)	mg/L	NIL	NIL	NIL
20	Faecal Coliform (MPN/100 mL)	mg /L	NIL	NIL	NIL

### 5.3.4 Quality of Soil in the Study Area

Soil samples were collected from 3 different locations of the study area such as Near B Block area(S1) , Near Administrative Block (S2) and Near Main Gate (S3). It was analyzed for the most relevant physical and chemical parameters including the heavy metals. It may be noted from the results of analysis that many of the soil samples have alkaline pH while the Assam soil is acidic in nature. The soil texture is dominated by sand in all the cases. The presence of cations such as Calcium, Magnesium, Sodium and Potassium is considerable for all the locations. The variation of SAR is found to be 1.5 to 2.2. The cation exchange capacity is also significant for entire study area. The soil also has considerable presence of the heavy metals.

Sr.No.	Sampling Locations	GPS Co-ordinate	
		Latitude	Longitude
1	Near B Block area(S1)	N26°16'28.72"	E091°73'65.74"
2	Near Administrative Block (S2)	N26°16'34.41"	E091°73'69.96"
3	Near Main Gate (S3)	N26°16'34.99"	E091°73'59.1"



Soil Sampling at various locations of R G Baruah College

**Table 7: Results of Soil Quality Monitoring at R G Baruah College**

S/N	Parameters	[S1]	[S2]	[S3]
1	PH (1: 2)	8.1	7.8	8.2
2	Conductance (ms)	0.16	0.23	0.26
3	Sand (%)	86.0	84.6	83.4
	Silt (%)	1.04	3.01	0.06
	Clay (%)	16.04	12.4	16.6
4	Water Holding Capacity (%)	43.3	48.1	51.3
5	Bulk Density (gcm <sup>-3</sup> )	1.2	1.1	1.3
6	Cation Exchange capacity (meq/kg)	0.28	0.26	0.27
7	Nitrogen (%)	0.07	0.06	0.06
8	Potassium (mg/kg)	18.2	12.4	17.4
9	Sodium (mg/kg)	23.6	20.1	18.2
10	Calcium (g/kg)	6.3	11.6	9.6
11	Magnesium (mg/kg)	34.2	54.1	46.2
12	Phosphorous (mg/kg)	11.2	12.4	7.6
13	Organic matter (%)	0.28	0.54	1.4
14	Sodium Absorption Ratio (SAR)	1.6	1.5	2.2
15	Zinc (mg/kg)	18.3	21.4	19.0
16	Copper (mg/kg)	4.1	8.6	6.6

## 5.4 Floral and Faunal diversity

### 5.4.1 Floral Biodiversity

The survey was conducted in the month of February and March 2022 following the Quadrat sampling procedure. The list of plant species with English common name, Scientific name, Family, Economic importance and the number of plant present in the campus are presented in the Table 5

In this present study, The different types of flora along with the total of species of the respective flora identified in the college campus are as follows.

<u>Different types of flora</u>	<u>Total number of species</u>
Herbs	: 66
Shrubs	: 132
Tree	: 214
Epiphytes	: 2

In the study area the vegetation is a complex of plant communities with considerable diversities. Since the plants showed normal and very good growth, there appears to be no adverse environmental factors prevailing in the area.

Plants of all types, in general, showed healthy and luxuriant growth in terrestrial, aquatic and aerial habitats in the study areas. Leaf diseases (leaf spot and shot-holes) on the aerial parts of the plants were very infrequently observed and did not show any adverse effect on the growth of the plants.

TABLE 5 : List of Tree found in the R.G.Baruah College Campus

Sl no	Family	Scientific name	Vernacular name	English name	Uses	Number
1	Dilleneaceae	<i>Dillenia indica</i> L.	Outenga	Elephant apple	Used as anti-diabetic, in cuisine, pickles, jams, etc.	1
2	Phyllanthaceae	<i>Phyllanthus emblica</i> L.	Aamlokhi	Amla	Helps in improving liver, heart and brain functioning, in Triphala to boost immunity	6
3	Arecaceae	<i>Dypsis b. lutescens</i> (H.Wendl.)Beentje& J. Dransf	Momaitamul	Areca palm tree	Grown as an ornamental plant in gardens in tropical and subtropical regions, and elsewhere indoors as a houseplant.	44
4	Anacardeaceae	<i>Mangifera indica</i> L.	Aam	Mango	Mango is source of vitamin , it help improves eye sight	5
5	Meliaceae	<i>Swietenia microphylla</i> King	Mahogoni	Mahagony	Used for its anti-bacterial, anti-oxidant, anti-inflammatory properties	10
6	Thymelaeaceae	<i>Aquillaria malaccensis</i> Lam.	Agaru	Agarwood	Used in treating diseases such as asthma, cough, and other ear & nose related problems.	5
7	Oleaceae	<i>Nyctanthes arbortristis</i> L.	Sewali	Night flowering jasmine	The leaves have been used in Ayurvedic medicine and Homoeopathy for sciatica, arthritis, and fevers, and as a laxative.	1
8	Fabaceae	<i>Peltophorum pterocarpum</i> (DC.)Backer ex K.Heyne	Radhachura	Peacock flower tree	Bark , flower and seeds are used in treatment of fever, piles and worms	2
9	Apocynaceae	<i>Derris indica</i> L.	Koros	Blackboard tree	Traditionally used for myriad diseases and complaints treatment, wood used to make pencils.	8
10	Meliaceae	<i>Azadirachta indica</i> Nees.	Neem	Neem	used in skin diseases, cosmetics, maintain dental health, as an anti-oxidant, etc.	8



11	Sapindaceae	<i>Litchi chinensis</i> Sonn.	Lesu	Lychee	Helps in digestion, boosts immunity, regulates blood pressure, helps in weight loss, etc.	1
12	Santalaceae	<i>Santalum album</i> L.	BogaChandan	White Chandan	Used to treat common cold, sore throat, heat stroke, gonorhea and conditions of heart and blood vessels.	7
13	Myrtaceae	<i>Psidium guajava</i> L.	Madhuri aam	Guava	Fruit is commonly eaten raw or made into jams and other foods. Leaves are used as medicine for stomach irregularities.	9
14	Rubiaceae	<i>Neolamarckia cadamba</i> (Roxb.) Bosser	Kadam	Burflower tree	Fruit and inflorescence is reportedly eaten by humans, leaves are fed to cattles, wood is used for construction purposes.	13
15	Sapotaceae	<i>Mimusops elengi</i> L.	Bokul	Spanish cherry	Roots used as a diuretic	4
16	Burseraceae	<i>Cannarium strictum</i> Roxb.	Dhup	Black damar	Medicinal and commercial uses for the resin it exudates called black dammar.	1
17	Moraceae	<i>Ficus benghalensis</i> L.	Borgos	Banyan tree	Leaves and twigs are fooder for cattle	1
18	Fabaceae	<i>Delonix regia</i> (Hook) Raf.	Krishna chura	Royal Poinciana	Young buds are used in treatment of infectious hepatitis	10
19	Fabaceae	<i>Tamarindus indica</i> L.	Teteli	Tamarind	Edible pulp, used as a component of savory dishes.	1
20	Verbenaceae	<i>Tectona grandis</i> L.f.	Segun	Teak	Used in the manufacture of furniture	5
21	Lythraceae	<i>Lagerstroemia speciosa</i> (L.) Pers.	Ajar	Queen crepe myrtle	Used as medicine for diabetes, digestive disorders, urinary disfunction, fevers, etc.	6

22	Fabaceae	<i>Pterocarpus santalinus</i> L.	Ronga Chanda n	Red Chandan	Used for treating digestive tract problems, coughs, fluid retentions, blood purification.	11
23	Myrtaceae	<i>Syzygium cumini</i> (L.)Skeels	Kolajaa m	Java plum	Fruit is natural blood purifier	2
24	Annonaceae	<i>Moonon longifolium</i> (Sonn.)B.Xue&R.M. K.Saunders	Debadar u	Mast tree	Leaves are used for ornamental decoration during festivals.	3
25	Fabaceae	<i>Cassia fistula</i> L.	Sonaru	Golden shower	Young buds are used in treatment of infectious hepatitis	2
26	Moraceae	<i>Ficus religiosa</i> L.	Ahot	Peepal	Used in traditional medecine for about fifty types of disorders including asthma, diabetes, diarrhea, epilepsy, gastric problems,	3
27	Solanaceae	<i>Solanum torvum</i>	Hatibhe kuri	Turkey berry	Used for treatment of fever, wounds, tooth decay, reproductive problems and arterial hypertension.	3
28	Cupressaceae	<i>Thuja occidentalis</i> L.	Thuja	Japanese thuja	Japanese ornamental plant	18
29	Arecaceae	<i>Cocos nucifera</i> L.	Narikol	Coconut	Grown throughout the tropics for decoration, as well as for its many culinary and nonculinary uses	3
30	Combretacea e	<i>Terminalia chebula</i> Retz.	Silikha	Myrobalan	Fruit is used in Treatment of Dementia, Constipation and diabetes	5
31	Cycadaceae	<i>Cycas circinalis</i> L.	Cycas	Queen sago	Seeds are dried and ground into flour used for making tortillas, soup and porridge.	1
32	Moraceae	<i>Artocarpus heterophyllus</i> Lam.	Kothal	Jackfruit	Fruits edible	3

33	Combretaceae	<i>Terminalia arjuna</i> (Roxb.) Wight & Arn.	Arjun	Arjuna tree	Used as medicine for asthma, bile duct, poisonings and scorpion stings but preliminarily used for heart diseases.	3
34	Elaeocarpaceae	<i>Elaeocarpus serratus</i> L.	Jolphai	Indian Olive	used as an ornamental plant and its fruit are eaten	2
35	Bombaxaceae	<i>Bombax ceiba</i> L.	Simolu	Silk cotton tree	The white fluffy fibres are carded into thread and woven into textiles in Nepal and India. In North India, the fibers are also used in pillows.	1
36	Myricaceae	<i>Myrica esculenta</i> Buch.-Ham. ex D.Don	Nogatega	Bay berry	Fruits edible, mainly used to prepare pickle and refreshing drinks.	1
37	Moringaceae	<i>Moringa olifera</i> L.	Sojina	Drumstick tree	Leaf powder used as hand wash, food, seed used as filter for water, etc.	3
38	Meliaceae	<i>Melia azedarach</i> L.	Ghoranem	China berry	Used as timber, as fodder, etc.	2

TABLE 6 : List of Shrubs found in the R.G.Baruah College Campus

Sl no	Family	Scientific name	Vernacular name	English name	Uses	Number
1	Oleaceae	<i>Jasminium officinale</i> L.	Chameli	Jasmine	Used to reduce stress, flavor beverages, dairy desserts, puddings, etc and also in to add fragrance to creams, lotions, etc.	1
2	Rhamnaceae	<i>Zizyphus mauritiana</i> Lam.	Bogori	Jujube	The fruit is eaten raw, pickled or used in beverages. The seeds are sedative and are taken, sometimes with buttermilk, to halt nausea.	1
3	Oleaceae	<i>Nyctanthes arbortristis</i> L.	Sewali	Night flowering jasmine	The leaves have been used in Ayurvedic medicine and Homoeopathy for sciatica, arthritis, and fevers, and as a laxative.	1
4	Malvaceae	<i>Hibiscus rosasinensis</i> L.	Joba	china rose	The flowers are edible and are used in salads, and can also be used as a pH indicator.	2
5	Solanaceae	<i>Cestrum nocturnum</i> L.	Hasnaha	Night blooming jasmine	Used for its anti-oxidant, hyper lipidemic, analgesic, anti convulsant activities.	1
6	Rubiaceae	<i>Ixora chinensis</i> Lam.	Rangolful	Chinese ixora	Flowers, leaves, roots, and the stem are used to treat various ailments in the Indian traditional system of medicine,	1
7	Solanaceae	<i>Solanum torvum</i>	Hatibhekuri	Turkey berry	Used for treatment of fever, wounds, tooth decay, reproductive problems and arterial hypertension.	3

8	Asparagaceae	<i>Furcraea foetida</i> (L.) Haw.		Giant cabuya	Peduncles used for construction of huts and as poles for fencing, ash burnt from stem are used as fertilizer.	1
9	Asparagaceae	<i>Dracena sanderiana</i> Mast	Lucky Bamboo	Lucky bamboo	Ornamental plant	5
10	Verbenaceae	<i>Duranta erecta</i> L.	Duronto	Golden dew drops	Ornamental plant	51
11	Asperagaceae	<i>Dracena surculosa</i> Lindl.		Milkyway	Ornamental plant	11
12	Euphorbiaceae	<i>Codiaeum variegatum</i> (L.) A. Juss.		Garden croton	Traditionally used for treatment of diarrhoea and intestinal worms and also kept as ornamental plant.	8
13	Apocynaceae	<i>Cascabela thevetia</i> (Pers.) Raf.	Korobi	Yellow oleander	Used as an ornamental plant and seed oil was used to make a 'paint' with antifungal, antibacterial and anti-termite properties.	3
14	Acanthaceae	<i>Pseudoranthemum caruthersii</i> (Seem.) Gal.		Caruther's false face	Ornamental plant.	8
15	Malpighiaceae	<i>Galphimia glauca</i> (Cav.) Kuntze		Spray of Gold	Ornamental plant.	3
16	Amaranthaceae	<i>Alternanthera brasiliana</i> (L.) Kuntze	Bishalya karani	Brazilianjo yweed	Used to cure inflammation, wound healing and night blindness.	13
17	Araliaceae	<i>Schefflera arborichlora</i> (Hayata) Merr.		Dwarf umbrella tree	Used as a hedge, specimen planting, poolside container plant, and even trains well into an espalier on the wall of a building.	3
18	Asperagaceae	<i>Dracena reflexa</i>		Dragon tree	Helps in air purification, ornamental value, increases humidity.	13
19	Apocynaceae	<i>Tebernaemontana divaricate</i> R.Br. ex Roem. & Schult.	Togor	Crepe jasmine	Used in reducing anxiety, improving sleep, managing blood pressure, etc.	3

TABLE 7 : List of Herbs found in the R.G.Baruah College Campus

Sl no	Family	Scientific name	Vernacular name	English name	Uses	Number
1	Bambucaceae	<i>Phyllostachys aurea</i> Riviere & Riviere		Golden bamboo	Ornamental	10
2	Musaceae	<i>Musa paradisiaca</i> L.	Kol	Banana	Roots and stems of <i>M. paradisiaca</i> are used as tonic in blood and venereal diseases. The juice of flowers mixed with curds is used in dysentery and menorrhagia	18
3	Acantheceae	<i>Pseudoranthemum caruthersii</i> (Seem.) Gal.		Caruther's false face	Ornamental plant.	8
4	Amaranthaceae	<i>Alternanthera brasiliana</i> (L.) Kuntze	Bishalya karani		Used to cure inflammation, wound healing and night blindness.	13
5	Lamiaceae	<i>Ocimum tenuiflorum</i> L.	Tulokhi	Tulsi	Treatment of diseases, insect repellent and disinfectant.	2
6	Crasulaceae	<i>Kalanchoe blossfeldiana</i> Poelln.	Kalanchoe	Flaming katy	Used to treat infections, rheumatism and inflammation.	1
7	Poaceae	<i>Cyanodon dactylon</i> (L.) Pers.	Duboribon	Bermuda grass	Juice of leaves is used to treat acidity, boosts immunity, cures constipation	10
8	Asteraceae	<i>Eclipta alba</i> L.	Bhringaraj	False daisy	The whole plant is used as antiseptic, febrifuge, tonic, deobstruent in hepatic and spleen enlargement and is emetic, also used as scalp tonic for promoting hair growth..	4

TABLE 7 : List of Epiphytes found in the R.G.Baruah College Campus

EPIPHYTES						
1	Orchidaceae	<i>Rhynchostylis retusa</i> (L.) Bloom	Kopou	Fox tail orchid	Ornamental plant and also used in medicines against asthma and tuberculosis.	2



Photographs of different Flora at R G Baruah College



*Neolamarckiacadamba*



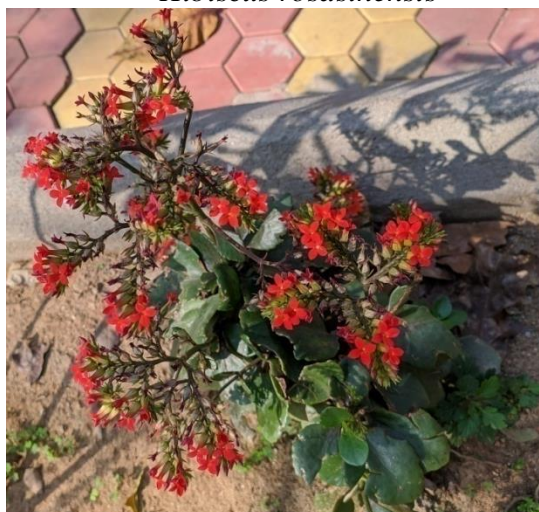
*Cycascircinalis*



*Hibiscus rosasinensis*



*Thujastandishii*



*Kalanchoeblossfeldiana*



*Delonixregia*





*Pterocarpussantalinus*



*Dracenasurculosa*



*Derris indica*



*Azadiractaindica*



*Rhynchosylisretusa* (L.) Bloom



*Ficus religiosa*





*Tectona grandis*



*Duranta erecta*



*Dracena marginata*



*Phyllostachys aurea*



*Araucaria columnaris*



*Murraya paniculata*

### 5.4.2 Faunal Biodiversity

In view of the need to determine the faunal characteristics of the study areas within the constraints of time, a checklist survey method was followed . Checklist surveys are employed primarily to confirm the presence of species, and sometimes the number of individuals of species in a surveyed area.

Avian Fauna surveys were carried out at each of the identified stations during early morning hours. Butterfly surveys were carried out at each of the identified stations during early morning hours.

The survey was conducted during February – March 2022. The faunal biodiversity recorded in the college campus is presented in the Table 6 - Table 7

**Table 6 :Avian fauna recorded in the R G Baruah College Campus**

Sr. No.	Common Name	Scientific Name
1	Asian barred owlet	<i>Glaucidium cuculoides</i>
2	Black Drongo	<i>Dicrurus macrocercus</i>
3	Black Hooded Oriole	<i>Oriolus xanthornus</i>
4	Common Myna	<i>Acridotheres tristis</i>
5	Homing Pigeon	<i>Columba livia domestica</i>
6	Spotted Dove	<i>Spilopelia chinensis</i>
7	Long Tailed Shrike	<i>Lanius schach</i>
8	Oriental Magpie Robin	<i>Copsychus saularis</i>
9	White-breasted kingfisher	<i>Halcyon smyrnensis</i>
10	House Sparrow	<i>Passer domesticus</i>
11	Black Kite	<i>Milvus migrans</i>
12	Red Vented Bulbul	<i>Pycnonotus cafer</i>
13	Purple Sunbird	<i>Cinnyris asiaticus</i>
14	Rose Ringed Parakeet	<i>Psittacula krameri</i>
15	Common Tailor Bird	<i>Orthotomus sutorius</i>
16	White Breasted Waterhen	<i>Amaurornis phoenicurus</i>
17	Common Hoopoe	<i>Upupa epops</i>
18	Cattle Egret	<i>Bubulcus ibis</i>
19	Asian Pied Starling	<i>Gracupica contra</i>
20	Blue Throated Barbet	<i>Megalaima asiatica</i>
21	Coppersmith Barbet	<i>Megalaima haemacephala</i>
22	Indian Jungle Crow	<i>Corvus culminatus</i>
23	Jungle Myna	<i>Acridotheres fuscus</i>
24	Pond Heron	<i>Ardeola</i>
25	Brown Shrike	<i>Lanius cristatus</i>
26	Asian Koel	<i>Eudynamys scolopaceus</i>
27	Chestnut Tailed Starling	<i>Sturnia malabarica</i>
28	Fluvious Breasted Woodpecker	<i>Dendrocopos macei</i>
29	House crow	<i>Corvus splendens</i>
30	Jungle Myna	<i>Acridotheres fuscus</i>

**Table 7 : Butterfly fauna recorded in the R G Baruah College Campus**

Serial No.	Common Name	Scientific Name
1	Common crow	<i>Eupolea core</i>
2	Common palmfly	<i>Elymnias hypermnestra</i>
3	Black veined Albatros	<i>Appias olferna</i>
4	Great eggfly	<i>Hypolimnas bolina</i>
5	Grey Pansy	<i>Junonia alites</i>
6	Himalayan Spangle	<i>Papilio protenor</i>
7	Common Mormon	<i>Papilio polytes</i>
8	Red Helen	<i>Papilio helenus</i>
9	Lime(Swallowtail)	<i>Papilio demoleus</i>
10	Black and white helen	<i>Papilio nephelus</i>
11	Tailed Joy	<i>Graphium agamemnon</i>
12	One Spot grass yellow	<i>Eurema andersonii</i>
13	Indian cabbage white	<i>Appiascanidia</i>
14	Lemon Pansy	<i>Junonia lemonias</i>
15	Common mime	<i>Papilio clytia</i>
16	Common banded demon	<i>Notocrypta paralysos</i>
17	Chocolate demon	<i>Ancistroides nigrita</i>
18	Yellow orangetip	<i>Ixias pyrene</i>
19	Small branded swift	<i>Pelopidas mathias</i>





Blue Throated BarbetRed



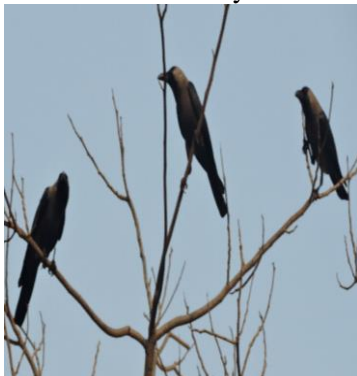
Vented Bulbu



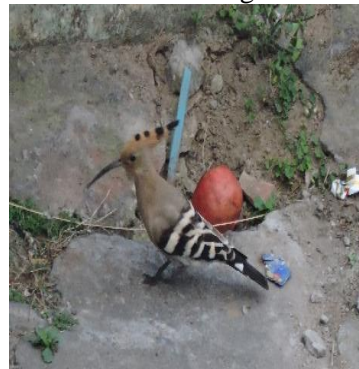
Common Myna



Black Drongo



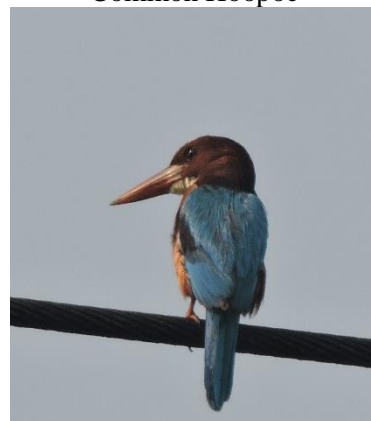
House crow



Common Hoopoe



House Sparrow



White-breasted kingfisher





Black Kite



Asian Koel(Female)



Asian Koel(Male)



Asian barred owlet



Rose Ringed Parakeet



Jungle Myna



Asian Pied Starling



Fluvous Breasted



Woodpecker Oriental Magpie

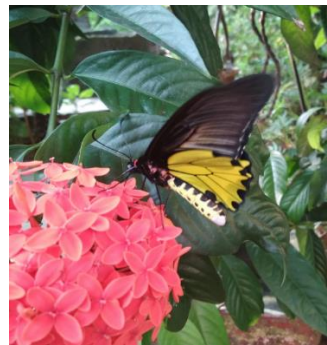


Robin Cattle Egret

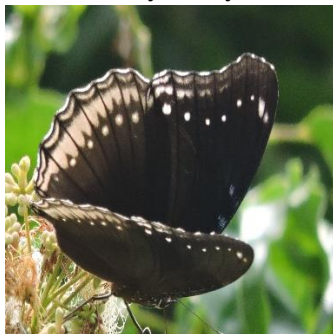
**Various Butterfly**



Grey Pansy



Birdwing



Great eggfly



Lemon Pansy



veined Albatros



Chocolate demon

## 5.5 Management Practices with respect to Water, Waste and Energy

### 5.5.1 Water Management Practices

- Water Storage per day = 2000
- Water Tank Cleaning = Twice per Annum
- Daily Consumption of water = 1.5 - 2 k Lit.
- Water charges paid per month = Rs.

Department /Block/Room	Wise water use	Water leakage repair	Use of water purification	Use of water cooler	Use of push Tap	Water use per day	Water tank cleaning	Water management practice
Old Block	√	-	√	√	√	1500 - 2000	Half yearly	√
Boys Common Room / Canteen Block	√	-	√	√	√			√
Girls Common Room	√	-	√	√	√			√
Administrative Block	√	-	√	√	√			√
Block A	√	-	√	√	√			√
NCC Block	√	-	√	√	√			√
Block B	√	-	√	√	√			√
Hostel Block	√	-	√	√	√			√
Block C	√	-	√	√	√			√

### Observations

- (i) Maintenance is needed for water transportation System
- (ii) There are no any push button taps
- (iii) Water escaping from overflows either inside or outside building was not identified during onsite audit.
- (iv) There is no clear policy of college management regarding the installation of low flow faucets or automatic faucets.
- (v) The College has a clear policy of rain water harvesting is identified. However It is yet to be implementation.
- (vi) The college has optimized its irrigation system at night or early morning hours to minimize evaporation for gardening.

### 5.5.2 Energy Management Practices

- Electric Load = 18 KW
- Daily Consumption = 38 unit
- Electric Bill paid for the period of 2021 -22 = Rs 1,20,484.68

Department /Block/Room	Old Block	Boys Common Room/Canteen Block	Girls Common Room Block	Administrative Block	Block A	NCC Block	Block B	Hostel Block	Block C
No. of Tube	3	10	6	42	94	5	17	-	9
No. of AC	-	-	-	6	-	-	-	-	-
No. of Projector	-	-	-	2	-	-	-	-	-
No. of photo copier	-	-	-	2	1	-	-	-	-
No. of computer printer	-	-	-	6	4	-	-	-	-
No. of LEDs	-	-	-	30	14	-	-	1	2
No. of Desktop/Laptop	-	-	-	9	8	-	3	-	-
Fan	3	9	6	47	110	2	22	2	16

#### Observations:

- i) There is minimum or practically negligible use of lights during day time as the building structure has possibility of daylight usage
- ii) The lighting arrangements are well balanced with arrangements to switch ON and OFF
- iii) The policy of college is switch off the lights and other electrical equipment when they are not in use.
- iv) Cleanliness is well maintained. In- house light fittings are cleaned time to time.
- v) Lights are negligibly operated during day time. The lights are operated manually. There is no any sensor based lighting system
- vi) The college is utilising natural lighting as first preference
- vii) Computers, printers, photocopiers and other equipment are switched off at the end of the day.
- viii) The all the electrical equipment are well operated. The overall electrification system is regularly monitored by a duly qualified electrician. A report on safety of electrification system is also submitted by an authorised agency.
- ix) Regarding the use of renewable energy college has planned to install solar panels which caters the lighting on roads and open fields.
- x) No grid electricity is purchased from any third party



### 5.5.3 Waste Management Practices

- Solid Waste Per Day = 20 kg
- Organic/ Food Waste per day = 25 kg .
- **E waste per annum = 7300 kg**
- Liquid waste = 35 kL
- Municipality Bill paid per month for disposal of waste =Rs.120/-

Department /Block/Room	Old Block	Boys Common Room/Canteen Block	Girls Common Room Block	Administrative Block	Block A	NCC Block	Block B	Hostel Block
Food/ organic Waste/Day	-	25	40	30	20	10	10	-
Paper waste/Day	-	10	20	10	20	10	10	-
Plastic ,Thermocol/Day	-	5	5	10	10	10	10	-
Other Waste/Day	-	10	10	10	15	15	15	-
<b>E-waste</b>	-	<b>5</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>20</b>	<b>20</b>	-
<b>Liquid waste L</b>	-	-	-	-	-	-	-	-
Garden Waste/day	-	20	40	25	20	20	20	-
Waste management practice	-	10	10	10	20	20	20	-

#### Observations:

- **Canteen Waste:** Canteen waste is dumped into the dustbin and it is collected by Guwahati Municipal Corporation every day morning. The audit team has witnessed the waste pickup.
- **LiquidWaste from College and the Hostels:** This waste is handled in the soak pits of the college. .
- **Paper Waste Management:**The College has taken care to minimize the generation of day to day paper waste. Papers are recycled by using the other un- utilized side. The internal correspondences are encouraged by means of email and other online mode. Most of the used papers are disposed through the recycler vendors at its residual values. Exam related waste papers are burnt for disposal.

- **Garden Waste:** This waste is biodegradable waste. The upkeep of garden is entrusted to appointed person who is responsible for its disposal. Generally the garden waste is utilized for the compost manure.
- **Construction Waste:** The College has some renovations work. Construction waste is generated. The college is effectively utilizing this waste as filling for new construction activities etc.
- **E-Waste:** The E-waste generally includes the tube- lights, CFL, LED, computer, computer accessories, are stored into the scrap yard of college and stored. Presently there is limited generation of waste. However, college needs to devise long term and regularized policy of the proper - waste disposal.

## 6.0 Transportation

The college has total students enrolled almost 2000 and employees 62. Students commute to college with the use of public transport. Personal commuting is not encouraged by college and hence there is not parking lot for the students inside college premise. Faculty members and other office staffs also preferably used public transport such as city buses, ola, uber, auto etc. During auditing it has been observed that majority of the students 80% used public Transport only 10 % of total students used their personal two wheelers and 1% students used their bicycles. 40% of total employees used their personal Four Wheelers.

<u>Mode of Transport</u>	<u>Number of persons</u>
Four wheelers	: 25
Two Wheelers	: 200
Public Transport	: 1600
Use of Bicycle	: 20

## 7.0 Carbon Footprint

Anthropogenic greenhouse gas (GHG) emissions are the major reason for global climate change, an urgent problem that various countries and international organizations are trying to solve . The atmospheric carbon dioxide (CO<sub>2</sub>) concentration has increased from 279 to 397 ppm since 1800, primarily due to fossil fuel combustion.

Carbon footprint is historically defined as *the total set of greenhouse gas emissions caused by an individual, event, organization or product, expressed as carbon dioxide equivalent*.

The present form of carbon footprint may be viewed as a hybrid, deriving its name from “ecological footprint”, and conceptually being a global warming potential indicator. Carbon footprint, being a quantitative expression of GHG emissions from an activity helps in emission management and evaluation of mitigation measures

### 7.1 Flora and Carbon Footprint Reduction

#### Summary of Carbon Footprint Reduction at R G Baruah College

<b>Carbon Absorption Capacity of Flora</b>	<b>1093 kg</b>
<b>Oxygen Emission Capacity of Flora</b>	<b>45,963 kg</b>
<b>The total quantity of CO<sub>2</sub> emitted by vehicles</b>	<b>6,41,155 kg</b>

#### 7.1.1 Carbon Absorption Capacity of Flora at R G Baruah College

Type of Tree	Total No. of Tree	Amount of CO <sub>2</sub> absorption/ tree (KG)	Total CO <sub>2</sub> absorption (KG)
Full Grown	100	6.8	$100 \times 6.8 = 680$
Semi Grown	114	3.4	$114 \times 3.4 = 387$
Shrubby Vegetation	132	0.2	$132 \times 0.2 = 26.4$
<b>Total amount of carbon absorption by Flora</b>			<b>1093</b>



**7.1.2 Oxygen Emission Capacity of Flora at R G Baruah College**

Type of Tree	Total No. of Tree	Amount of CO <sub>2</sub> absorption/ tree (KG)	Total CO <sub>2</sub> absorption (KG)
Full Grown	100	117.6	100x117.6 = 11,760
Semi Grown	114	58.8	114x58.8 = 6,703
Shrubby Vegetation	50 (200/400=0.21)	550	50 x 550 = 27500
<b>Total amount of Oxygen Emission by Flora</b>			<b>45,963</b>

**7.1.3 Carbon Footing by Transport System**

Emission of CO<sub>2</sub> through transport system – both public and private – is very high in India as India is credited with the third rank in carbon emission in this regard. It is estimated that in India, 9% of the total carbon is emitted by the transport system.

In R G Baruah College during survey it was observed that on an average, there are 40 number of four wheelers are used by faculty while 200 number of two wheelers are used by students and staff. It is appropriate to calculate the petrol consumption separately for four wheelers and two wheelers.

The fuel consumption by vehicles is determined by the type of vehicle, year of manufacturing, maintenance status, traffic system of the particular area, etc. High-end and medium-range bikes consume different quantities of petrol.

Conversion table to calculate carbon emission by vehicles per litre is very complicated in view of the local variables to be taken for calculation. Instead, a simple but universally accepted calculation calendar for various types of fuels and their CO<sub>2</sub> conversion rate was adopted.

**Emissions of CO<sub>2</sub> by transport system of R G Baruah College**

It is estimated that the average mileage covered by each vehicle is about	<b>20 km.</b>
The total mileage covered by the 200 number of two wheelers per year	<b>(200 × 20 × 200) = 800,000 km</b>
The average mileage covered by four wheelers is also the same	<b>20 km per day</b>
The total mileage covered by 40 four wheelers per year	<b>(40 × 20 × 200) = 160,000 km</b>
The total mileage covered by two and four wheelers per year	<b>(800000+ 160000) = 960000km</b>
The standard fuel consumption for two wheelers is taken	<b>35 km / 1L of Fuel</b>
The standard fuel consumption for Four wheelers is taken	<b>15 km / 1L of Fuel</b>
The total quantity of petrol consumed by 200 number Two Wheelers	<b>(800000 /35) = 228571 L</b>
The total quantity of fuel consumed by 40 number four wheelers per year	<b>(160000/15) = 10666L</b>
The total fuel consumption per year (Two+ Four) Wheelers	<b>(228571+ 10666) = 239237 L</b>
Combustion of 1 litre of diesel/petrol leads to the emission of CO <sub>2</sub>	<b>2.68 kg</b>
<b>The total quantity of CO<sub>2</sub> emitted by 239237 litres of fuel per year</b>	<b>(239237 × 2.68) = 6,41,155 kg</b>

### 8.0. Organizational effort

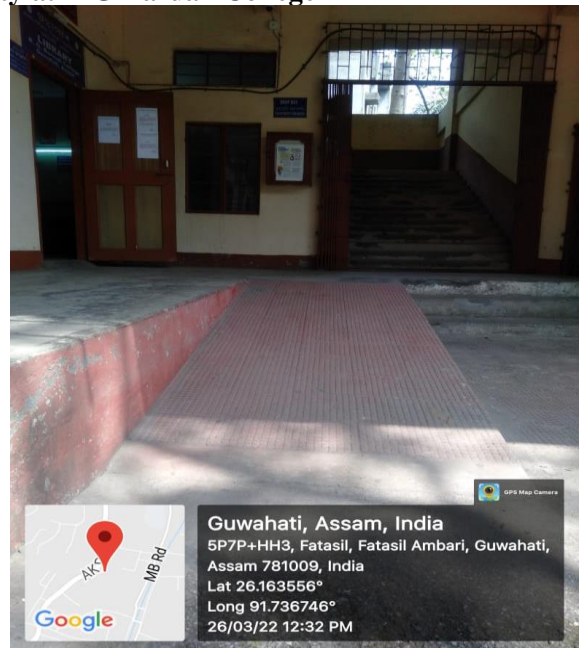
S/N	Items	Responses
<b>Organizational effort</b>		
1	Is the college having campus green team?	Yes. Copy Attached
2	Have you established an environmental mission/vision for your campus	Yes.
3	College initiates any tree plantation programme	Yes. College Foundation day and World Environment Day etc
4	How may numbers of existing tree, shrubs, herbs and climber species	Tree- 214, Shrubs- 132, Herbs- 66, Epiphytes- 2
5	How may numbers of existing full grown tree, semi grown trees and bushes	Full Grown -100 Semi Grown – 114 Bushes - 68
6	Is there any lawn in the college campus? If yes what is area	No.
7	Is the college encouraging sustainable behaviour via: Education campaigns? Such as Posters, placards, Messages, incentives? Contests? awards?	Yes, Particularly on science day
8	Is the college staff modelling sustainable behaviour for students, peers, and community?	Yes, Avoided the use of plastic materials as much as possible in any kind of meeting, gathering or functions etc. .
9	Is the college having solar, wind, or other forms of renewable energy?	No
10	What are the good practices pertaining to Transport?	Encourage for the use of public transport, create plastic free environment
11	What is the average number of vehicle movements in terms of two & Four wheelers	Two Wheelers : 185 – 200 Four Wheelers : 35 - 40
12	Has the college calculated its carbon footprint	Not yet



**Common Drinking water facility at R G Baruah College**



Guwahati, Assam, India  
5P7P+HH3, Fatasil, Fatasil Ambari, Guwahati, Assam 781009, India  
Lat 26.163556°  
Long 91.736746°  
26/03/22 12:33 PM



Guwahati, Assam, India  
5P7P+HH3, Fatasil, Fatasil Ambari, Guwahati, Assam 781009, India  
Lat 26.163556°  
Long 91.736746°  
26/03/22 12:32 PM

**Ramp for Physically Disable Students**

## 9.0 Recommendations

### Water Management

- The college Management needs to consider the low - flow faucets, as the replacement for the existing conventional taps.
- The toilet and wash room should equipped with push button
- Sprinkler and drip irrigation should use for gardening
- The college should properly install rain water harvesting unit
- Further, rainwater pits can be prepared at appropriate places and restoration activities may be initiated to sustain the health of ponds in the campus.

### Energy Management

- The public lights within the campus may be run with solar panels and there placement of existing lights should be done with LED lamps.
- Energy auditing should be done with the help of Energy Management Centre (EMC)

### Waste Management

- Specific waste management plans should be adopted to manage solid waste in the campus, use of plastic carry bags, plastic glass/ cups/plates and flex boards should be banned inside the College to create a plastic free zone.
- For managing organic wastes vermicompost plant may be installed in the campus
- There should be a proper system for the management of hazardous wastes.
- More toilets may be constructed in the campus and in hostels

### Green Management

- The Campus should develop a garden in front of all the buildings.
- Green habitat concept should be adopted for all the building construction activities of the college in future, which may help a long way in reducing energy usage, increasing aesthetic appeal of the buildings and class rooms, besides reducing carbon foot print.
- Further, more green spaces should be established all around the campus around larger trees and shades for the benefit of the students. All these aspects should monitor by Green Campus Committee.
- Air quality, Drinking water quality should monitor annually.

### Fire & Safety Management

- More Fire safety instruments should be installed in all the buildings

### Transportation Management

- Vehicle pooling should be promoted both among students and faculty and use of bicyclesshould be promoted as a policy of college.

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