



**VIVEKANANDA GOVERNMENT DEGREE COLLEGE
VIDYANAGAR, HYDERABAD**

**GREEN AUDIT REPORT
2021**



**Prepared by the Green Audit Committee,
VGDC, Hyderabad**

VIVEKANANDA GOVERNMENT DEGREE COLLEGE,
VIDYANAGAR, HYDERABAD

NOTICE

Re. No: 12/VGDC/Estt/2021;

Dt: 5/05/2021

As per the proceedings of Commissioner of Collegiate Education, Telangana State, Hyderabad. Vide File No. CCE/AC/QUITY/1/2021 Academic Cell Dt: 23/04/2021. I hereby set up the college level audit committee, Green Audit (Water Audit, Energy Audit, Environmental Audit, E-Waste Audit, Trees and Plants audit, Carbon Foot Print Audit etc.) which comprises,

Chairman: Dr. G. Sukanya

External Member: Principal GDC, Sithaphalmandi

Convenor: Ms.S. Nirmala (VICE PRINCIPAL)

Members:

1. Dr. N. C. Sowjanya, Asst. prof. of Botany
2. Dr. J. Chinna Babu, Asst. prof. of physics
3. Smt. N. Sreedevi, Asst. prof. of Zoology
4. Sri. M. Anil Kumar, Asst. prof. of Chemistry

Student Volunteers:

1. K. Naveen, BZC, Ist Yea
2. Durga Moulikashi, BZC, Ist Year
3. K. Mahendra, BSC, IIIrd Year
4. Narsimha, BSC, IIIrd Year
5. U. Rohith, MPCs, IIIrd Year
6. M. Sharanya, IIIrd Year


PRINCIPAL

PRINCIPAL
VIVEKANANDA GOVT. DEGREE COLLEGE
Vidyanaagar, Hyderabad-44.

Green Audit Team

Principal

Chair Person

IQAC Co-ordinator

Vice Chairperson

Co-ordinator

Ms.S. Nirmala (Vice Principal &
Asst. Prof. of Statistics)

Members

Dr.N.C.Sowjanya, Asst. Prof. of Botany
Dr.J.Chinna Babu, Asst. Prof. of Physics
Ms.N.Sridevi, Asst. Prof. of Zoology
M.Anil Kumar, Asst. Prof. of Chemistry

External Member(S)

1. Principal, GDC Sitaphalmandi
2. Dr.M.Mamatha, Professor
Forest College and Research Institute,

Student Volunteers

1. K.Naveen, BZC I Year
2. Durga Moulikakshi BZC I Year
3. K.Mahendra B.Sc III Yr
4. Narsimha BSc III Yr
5. U.Rohith MPCs III Yr
6. M.Sharanya III Yr

**COMMISSIONERATE OF COLLEGIATE EDUCATION
TELANGANA, HYDERABAD
PROFORMA FOR GREEN AUDIT**

College Profile

Name of the College : VIVEKANANDA GOVERNMENT DEGREE COLLEGE

Address : H.No.1-9-670/A, Adikmet, Vidyanagar,
Hyderabad – 500 044.

Contact Info : Principal, 9866526619

Campus Area : 1.136 Acres

Built-up Area : 2926.446 Sq. Mts.

Is the Building having ventilators for natural air flow in all rooms YES

The Student and Faculty Strength of the College

Strength	Male	Female	Total
No. of students	1380	411	1791
No. of Teaching staff	16	23	39
No. of Non-Teaching staff	11	08	19

Physical Structure

The available land of the college is 1.136 Acres and the built up area of the college is 2926.446 Sq.Ft.

No. of Class Rooms	22
No. of Laboratories	7
No. of Conference halls	1
Library halls	1
Auditorium	1
Canteen	NIL
Any Other (Pl. Specify)	1 Virtual class room

ABOUT US:

Vivekananda Government Degree College (VGDC), Vidyanagar, located in the heart of the city of Hyderabad, affiliated to Osmania University, is one of the oldest Higher Education Institutions in Hyderabad. The college was established in the year 1966 as an evening college, Swami Vivekananda Education Society (SVES) Telugu Kalasala (Evening) under the chairmanship of Dr. Marri Chenna Reddy, former Chief Minister of Andhra Pradesh, and Acharya Khandavalli Lakshmi Ranjanam, an eminent scholar and educationist as the secretary. The SVES, Telugu Kalasala was a composite college offering PUC and UG courses in Arts and Commerce. It was taken over by the Government in 1982 and named as SVES Government Telugu Kalasala (Evening). In compliance with the Government of Andhra Pradesh's policy, the college was converted into Day College in 1990 and named Vivekananda Government College, Vidyanagar. In 2002, PUC was bifurcated and was renamed Vivekananda Government Degree College and B.SC (MSCs) was introduced to the existing BA and B.COM streams. The college was accorded recognition under 2(f) and 12(b) of the UGC Act in 1970.

The college provides tertiary education to deserving youth in a secular environment and is committed to serve the cause of economically weak and socially underprivileged students. During the last five and a half decades the college has grown from strength to strength and presently facilitates 1700 students to access higher education.

The College was accredited by NAAC with CGPA of 2.10 at 'B' grade in the year 2015 with 8 UG courses, 10 staff members and 565 students.

The College adopted the Choice Based Credit System (CBCS) from the academic year 2016-17. New UG programs in BA, B.COM and BSc with many combinations were introduced in the academic year 2018-19 including Life sciences; in 2019-20, BBA was introduced along with MOOCS courses. Presently the college is offering UG programs in BA, B.Com., and B.Sc. The curricular, co-curricular, and extra-curricular activities focus on equipping the students with value based and skill-oriented education.

The college is in two blocks, with spacious classrooms, laboratories and a Library with a reading room and an e- corner. The Telangana Skill Knowledge Centre (TSKC), the MANA TV, NSS are some of the support services provided by the college.

There are 36 experienced teaching staff, a Librarian, a Physical Director and 23 members of non-teaching staff to help in the maintenance and smooth functioning of the college. The overall academic, administrative and financial responsibility of the college is vested with the Principal.

Vision

The vision of VGDC is to provide access to quality Higher Education to the students from diverse backgrounds of the society and inculcate human values to enable them to face the challenges of life with courage, confidence and mould them into socially responsible citizens.

College Motto: “Let a hundred flowers bloom, let a hundred schools of thought contend”, is the slogan of VGDC, and the college provides education to youth in a secular environment and is committed to serve the cause of socially, economically weak, by providing a learning space that develops critical and creative thinking to make them truly empowered citizens.

Mission

The mission of the college is to provide quality Higher Education for the empowerment and self-reliance of students.

- To offer programs catering to the changing needs of the society.
- To extend need-based and skill-based training to students and make them employable.
- To promote a learning community in which all, especially those from less privileged backgrounds feel part of the collaborative high-quality educational process.
- To inculcate moral values and social awareness among the students.
- To generate awareness and concern for protecting and sustaining the environment.
- To encourage innovative and collaborative basic research to benefit the community
- To promote community service through outreach programs, create an environment to excel in co-curricular and extracurricular activities.
- To create platforms for students to hone their leadership skills.

Introduction

The term “GREEN AUDIT” can acronymically called as “Green Readiness in Ensuring Ecological Neutrality”. Green auditing is an umbrella term, is known by other name “Environmental Auditing”. The Green Audit practically involves Energy Conservation, use of Renewable resources, Rainwater harvesting, plantation, Hazardous waste management and E-waste.

The concept of green audit is considered as a tool to evaluate environmental standards and an efficient and ecological way to solve environmental problems. Vivekananda Government Degree College, Vidyanagar conducts green audit and strives to maintain eco-friendly atmosphere in and around the campus. The green audit committee is group of staff members and students. It is necessary to conduct Green Audit in college campus and involve students to enable them to get awareness of Green Audit and its advantage to save planet. Through Green Audit, one gets a direction as how to improve the condition of environment. Green audit is assigned to the criteria 7 of NAAC, National Assessment and Accreditation Council.



Location of the College (Urban)

Source: Google Earth

Objectives of Green Audit

- To take up Environmental risk assessment including compliance to regulations, soil, water, solid and e-wastes, emissions, hazardous products and noise pollution.
- To bring about waste minimization.
- To promote optimal utilization of energy, water and other natural resources.
- To organize recycling programs.
- To bring awareness in students on real concerns of environment
- To inculcate the importance of sustainable development.
- To improve health and promote safety.
- To promote awareness on management of resources.
- To discard e-waste in safe manner.
- To enhance the ambience of the college by promoting plantation.

Water Management

Introduction

Water is a simple liquid that is of great importance for human life and sustenance. It is simply impossible to imagine life without water, if there are no ample sources of water left then it would be a matter of great concern. Hence it is very important to use our present water sources judiciously and try to save as much water as possible. VGDC realizes the importance of Water Management. Water Audit / Water Management is only way which helps in conservation of water. Water audits provide a way to identify the water usage and various causes like excess water use, leakage etc.

Methodology adopted

1. **Sample collection** The water samples from Tap water and Borewell were taken and the samples are sent to the Ground Water Department, Khairthabad for Analysis
2. **Questionnaire** – The data is collected through detailed questionnaire survey method.

Auditing for Water Management (Questionnaire)

1. List uses of water in your college.
 - Drinking
 - Water for Toilets
 - Water for Garden
2. What are the sources of water in your college?
 - GHMC tap water, Borewell
3. How many wells are there in your college?
 - Nil
4. No. of motors used for pumping water from each well?
 - 02
5. What is the total horse power of each motor?
 - 3 HP
6. What is the depth of each well?
 - NA
7. What is the present depth of water in each well?
 - NA
8. How does your college store water?
 - Water tanks (6 Tanks)

9. Quantity of water stored in your overhead water tank? (in litres)
- 6500Ltrs
10. Quantity of water pumped every day? (in litres)
- 3000 Litres
11. If there is water wastage, specify why.
- NIL
12. How can the wastage be prevented / stopped?
- By replacing the leaking taps, by turning off taps and creating awareness by organizing rallies, debates, poster presentations etc
13. Locate the point of entry of water and point of exit of waste water in your College.
- Not applicable
14. Where does waste water come from?
- Not applicable
15. Where does the waste water go?
- Not applicable
16. What are the uses of waste water in your college?
- Not applicable
17. What happens to the water used in your labs? Whether it gets mixed with ground water?
- No, the water is discharged into the Drainage.
18. Is there any treatment for the lab water?
- Not at present
19. Whether green chemistry methods are practiced in your labs?
- Not at present
20. Write down four ways that could reduce the amount of water used in your college.
- Continuous monitoring of taps for the leakages
 - Installation of Drip irrigation system.
 - Placing of sign boards to educate students and staff to prevent wastage of water.
21. Record water use from the college water meter for six months.
- Rs.25000 (Approx.)
22. Bimonthly water charges paid to water connections if any
- Rs.5000 (Approx)

23. No. of water coolers. Amount of water used per day? (in litres)

- Nil

24. No. of water taps. Amount of water used per day?

- 30 water taps, 3000Ltrs/day

25. No. of bath rooms in staff rooms, common, hostels. amount of water used per day?

- Nil

26. No. of toilet, urinals. Amount of water used per day?

- No. of Toilets 25, Water used in the toilet 3000Ltrs/day

27. No. of water taps in the canteen. Amount of water used per day?

- At present there is no Canteen in the college, Nil

28. Amount of water used per day for garden use.:

- 2000Ltrs directly from the borewell

29. No. of water taps in laboratories. Amount of water used per day in each lab?

- 12 taps/ the laboratories are established recently and will be put into use from this academic year (2021-22)

30. Total use of water in each hostel?

- There is no hostel attached to the college, Not applicable

31. At the end of the period, compile a table to show how many litres of water have been used in the college for each purpose

32. Is there any water used for agricultural purposes?

- Not applicable

33. Does your college harvest rain water?

- Yes (There are two rain water harvesting pits located at strategic locations)

34. If yes, how many rain water harvesting units are there?

- 2 units (Pictures enclosed)

35. How many of the taps are leaky? Amount of water lost per day?

- Nil

36. Are there signs reminding people to turn off the water?

- Yes

37. Is there any waterless toilets?

- No

38. How many water fountains are there?

- No

39. How many water fountains are leaky?

- NA

40. Is drip irrigation used to water plants outside?

- No

41. How often is the garden watered?

- Daily

42. Quantity of water used to water the ground?

- 1000Ltrs/Annum

43. Quantity of water used for bus cleaning? (litres per day):

- NA, the college does not own any bus

44. Amount of water for other uses? (items not mentioned above): No

45. Area of the college land without tree/building canopy.: 1500Sq.Yard

46. Is there any water management plan in the college?

- Rainwater Harvesting pits
- Eco club organizes water conservation related activities

47. Are there any water saving techniques followed in your college? What are they?

- Poster presentation on Water conservation
- Sign boards placed at different locations.
- Periodically checking the taps for any leakage.
- Monitoring the quantity of water filled in the overhead tanks.

48. Please share Some IDEA for how your college could save more water.

- Set up an Action plan
- Staff and students can form monitoring teams and periodically check certain crucial points of water wastage.
- Pasting the posters on water conservation and judicious usage on notice boards.
- Pasting the sign boards near drinking water facilities, washrooms etc.
- Encourage the use of “leftover” water from a drinking glass or bottle to water plants.
- Watering plants of the college garden in the early morning/late evening to decrease the amount of evaporation.

Auditing for Energy Management

Introduction

The Energy Audit is the process of systematic approach for decision making in the field of Energy conservation and Energy management. It endeavours to equalize the total energy inputs with their utilization, and serves to identify all the energy streams in the facility. Energy audit is the first step which can be conducted within an organization for the development of electrical energy efficient measures. The purpose of the energy audit is to identify, quantify, describe and prioritize cost saving measures relating to energy.

Methodology adopted

Questionnaire – The data is collected through detailed questionnaire survey method.

Questionnaire

1. List ways that you use energy in your college. (Electricity, electric stove, kettle, microwave, LPG, firewood, Petrol, diesel and others)
 - Electricity
2. Electricity bill amount for the last year
 - 2,40,005/-
3. Amount paid for LPG cylinders for last one year
 - NIL
4. Weight of firewood used per month and amount of money spent? Also mention the amount spent for petrol/diesel/ others for generators?
 - Nil
5. Are there any energy saving methods employed in your college? If yes, please specify. If no, suggest some.
 - Yes, LED Bulbs are installed in all the classrooms, staffrooms and office.
6. How much money does your college spend on energy such as electricity, gas, firewood, etc. in a month.
 - Rs.20,000/- to 22,000/-
7. How many CFL bulbs has your college installed? Mention use (Hours used/day for how many days in a month)
 - Nil
8. Energy used by each bulb per month? (for example- 60-watt bulb x 4hours x number of bulbs = kWh).
 - 1.2 kWh
 -

9. How many LED bulbs are used in your college? Mention the use (Hours used/day for how many days in a month)
- 188, They are used for approx. 6 hrs for 24 days in a month.
10. Energy used by each bulb per month? (kwh).
- 0.54 kWh
11. How many incandescent (tungsten) bulbs have your college installed? Mentions use (Hours used/day for how many days in a month)
- NIL
12. Energy used by each bulb per month? (kwh).
- Nil
13. How many fans are installed in your college? Mention use (Hours used/day for how many days in a month)
- 134, They are used for approx. 6 hrs for 24 days in a month.
14. Energy used by each fan per month? (kwh)
- 24.12 kWh
15. How many air conditioners are installed in your college? Mention use (Hours used/day, for how many days in a month)
- 4 (They are used for approx. 4 hrs/day)
16. Energy used by each air conditioner per month? (kwh).
- 180 kWh
17. How many electrical equipment including weighing balance are installed your college? Mention the use (Hours used/day for how many days in a month)
- Nil
18. Energy used by each electrical equipment per month? (kwh).
- Nil
19. How many computers are there in your college? Mention the use (Hours used/day for how many days in a month)
- 134 (They are available for staff and students and are used for approx. 6 hrs/day)
20. Energy used by each computer per month? (kwh)
- 4 kWh
21. How many photocopiers are installed by your college? Mention use (Hours used/day for how many days in a month).
- 8 (1 hour / 20 days)

22. How many cooling apparatuses are installed in your college? Mention use (Hours used/day for how many days in a month)

- Nil

23. Energy used by each cooling apparatus per month? (kwh) Mention use (Hours used/day for how many days in a month)

- Nil

24. Energy used by each photocopier per month? (kwh) Mention the use (Hours used/day for how many days in a month) how many inverters your college installed? Mention use (Hours used/day for how many days in a month)

25. Energy used by each inverter per month? (kwh)

- 6 kWh

26. How many electrical equipment are used in different labs of your college? Mention the use (Hours used/day for how many days in a month)

- Nil

27. Energy used by each equipment per month? (kwh)

- Nil

28. How many heaters are used in the canteen of your college? Mention the use (Hours used/day for how many days in a month)

- Nil (At present there is no canteen in the college)

29. Energy used by each heater per month? (kwh)

- Nil

30. No of street lights in your college?

- 5

31. Energy used by each street light per month? (kwh)

- 60kWh

32. No of TV in your college and hostels?

- 2

33. Energy used by each TV per month? (kwh)

- 2 kWh

34. Any other item that uses energy (Please write the energy used per month) Mention the use (Hours used/day for how many days in a month)

- Nil

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

- Nil

36. Do you run “switch off” drills at college?

- NO (Switch off lights/fans sign boards are kept all over the campus)

37. Are your computers and other equipment put on power-saving mode?

- Yes

38. Does your machinery (TV, AC, Computer, weighing balance, printers, etc.) run on standby mode most of the time? If yes, how many hours?

- Yes, 1hour

39. What are the energy conservation methods adapted by your college?

- Installing the LED bulbs (Planning to establish Solar panels soon)

40. How many boards displayed for saving energy awareness?

- Nil

41. How much ash is collected after burning fire wood per day in the canteen?

- Nil

42. Write a note on the methods/practices/adaptations by which you can reduce the energy use in your college campus in future.

- College is planning to establish Solar panels to use the solar energy as substitute of general Electricity, thereby we can reduce the usage of electricity.
- Replacing old Tubes and bulbs by LED bulbs and tubes
- Conducting the awareness programs on conservation of energy to students and staff.

Calculation of energy for electrical appliances Appliance Power used in (watt) Usage per day (hours) Number of appliances Average kWh per day (Watt X hours X Number X 1000)
Average kWh per month (Watt X hours X Number X 1000 x 30) Incandescent bulb 60-watt
CFL 18 W Microwave 1000W Stove 3000W Kettle 2500W

Auditing for Waste Management

1. What is the total strength of students, teachers and Non-teaching staff in your College? No. of Students No. of Teachers No. Non-teaching staff Gents Ladies Total

Strength	Male	Female	Total
No. of Students	1380	411	1791
No. of Teaching staff	16	23	39
No. of Non-Teaching staff	11	08	19

2. Which of the following are available in your College?

S.No.	Availability in the college	Area
1.	Total Area Occupied by the College	1.136 Acres/Built-up area 2926.446 Sq. mts
2.	Garden area	150 Sq. yards (Approx.)
3.	Garbage dump	4
4.	Playground area	800 Square yards
5.	Laboratories	5 (No.)- New building Each 30' X 20' 2 (No.) –Old building 1 – 25' X 30' 2- 15' X 20'
6.	Toilets	25
7.	Car/Scooter shed area	50 square yards
8.	No. of classrooms	22
9.	Office room	1
10.	Kitchen & Canteen	NIL
11.	Others	Virtual classroom – 1 Library - 1

3. Which of the following are found near your college? Mark the level of disturbance it creates for the college in a scale of 1 to 9.

- Municipal dump yard - Not in vicinity
- Garbage heap – Not in vicinity
- Public convenience Sewer line – Not in vicinity
- Stagnant water – Not in vicinity
- Open drainage Industry – Not in vicinity
- Bus / Railway station Market / Shopping complex / Public halls - The college is located in the heart of the city hence, there is some disturbance related to Public Transport System.

WASTE

4. Does your college generate any waste? If so, what are they? How much quantity?

- Number or weight E-waste Hazardous waste (toxic) - NIL
- Solid waste – Paper and other disposable items 10Kg (Approx.) per week
- Dry leaves – 2KG per day
- Canteen waste - NIL
- Liquid waste –Laboratories are established recently, hence there is negligible generation of liquid waste.
- Glass -NIL
- Unused equipment -NIL
- Medical waste if any - NIL
- Napkins Others (Specify) - 2Kg per month (Approx.)

5. Is there any waste treatment system in the college?

NO

6. Is there any treatment for toilet/urinal/sanitary napkin waste?

Sanitary napkins are disposed off through incinerator

7. What is the approximate quantity of waste generated per day? (in Kilograms) Office
Laboratories Canteen/kitchen

2KG per day

8. Why waste is a problem?

Waste is a problem as if it not disposed properly it may lead to environmental pollution and cause health hazards.

9. Whether waste is polluting ground/surface water? How?

NO

10. Whether waste is polluting the air of the college? How?

NO

11. How is the waste generated in the college managed? Methods 1 Composting 2 Recycling 3 Reusing 4 Others (specify)

Composting - Garden waste and other organic waste generated are buried in compost pit and the manure generated is used for the plants.

12. How many separate boxes do you think you would need to put into a classroom to start a waste segregation and recycling campaign?

Two boxes – Green for collecting wet waste and blue for collecting dry waste

13. What should be the use for each box? (Develop a colour code with reasons)

Two boxes – Green for collecting wet waste and blue for collecting dry waste

14. Do you use recycled paper in College?

College has a MoU with ITC WoW. The used stationery is collected by them from the students and recycle the same. The students are given away notebooks and certificates.

15. Is there any waste wealth program practiced in the college?

The Eco-club of the college regularly organizes activities and encourages students to prepare different articles from Waste

16. Approx Bio degradable Non-Bio degradable Hazardous Others < 1 kg. 2 - 10 kg. > 10 kg.

2-10 KG.

17. How would you spread the message of recycling to others in the community? Have you taken any initiatives? If yes, please specify.

The college would like to advocate that recycling is important as it prevents pollution, saves energy, reduce greenhouse gas emission, reduces amount of waste generated and promote sustainable development.

Initiatives planned

- Door to door campaign by students to educate the people on segregation and proper disposal of dry and wet waste.
- Taking out rallies in the local community to increase the green cover.
- Distributing pamphlets on method of safe disposal of e-waste

18. Can you achieve zero garbage in your college? (Reduce, Recycle, Reuse, Refuse) If yes, how?

- **Reduce** – Reducing paper usage by promoting online exams and online assignments.
- **Recycle** – The wet and dry waste are to be segregated and waste is to be recycled through compost pit.
- **Reuse** – Encouraging students to use durable water bottles and tiffin packs.
- **Refuse** – Strictly implementing the use of “Single-use plastic” and promoting use of eco-friendly bags.

Auditing for Green Campus Management

1. Is there a garden in your college? Area?
We have a well-established garden in the college. The area of plantation is around 150 square yards (Approx.)
2. Do students spend time in the garden?
Yes, Students spend time in the garden for relaxation and also support in the maintenance of the garden.
3. List the plants in the garden, with approx. number of each species
Annexure -1 enclosed.
4. Suggest plants for your garden
Annexure – 2 enclosed.
5. List the species planted by the students, with numbers.
Annexure – 3 enclosed.
6. Whether you have displayed scientific names of the trees in the campus?
Yes, QR Codes are attached to the plants, upon scanning them the details of the plants is displayed.
7. Is there any plantations in your campus? If yes specify area and types of plantation.
Every year in the month of July, Harithaharam, a Government of Telangana initiative plantation programme is carried out in the college. Many social forestry trees are planted during such drives.
8. Is there any vegetable garden in your college? If yes, how much area?
No, planning to establish one soon.

9. Is there any medicinal garden in your college? If yes how much area?
Yes, we have set up a medicinal garden in approximately 50 square yards.
10. What are the vegetables cultivated in your vegetable garden?
NIL
11. How much water is used in the vegetable garden and other gardens?
Around 100 to 150 gallons of water is used every day for watering the plants. The source of water is borewell and municipal water.
12. Who is incharge of garden in your college.
The College garden is maintained under the Department of Botany. At present there are two gardeners in the college.
13. Are you using any type of recycled water in your garden?
Not at present.
14. List the name and quantity of pesticides and fertilizers used in your garden.
Chemical pesticides and fertilizers are not used. Vermicompost, neem oil and neem powder are used.
15. Whether you are doing organic farming in your college? How?
Most of the fertilizers used are natural in origin.
16. Do you have any composting pit in your college? If yes, what are you doing with the compost generated.
Yes, we have a compost pit. The manure generated is utilized as fertilizer for plants.
17. What do you doing with the vegetables harvested? Do you have any student market?
At present we do not have vegetable garden in our college.
18. Is there any botanical garden in your campus? If yes give the details of campus flora.
Annexure 1 enclosed.
19. Give the number and names of the medicinal plants in your college campus.
Annexure 3 enclosed.
20. Any threatened plant species planted/conserved?
No
21. Is there a nature club in your college? If yes what are their activities?
There is an Eco club in our college. Various Environmental related activities are organized by that club.
- Poster presentation on Biodiversity, conservation of water
 - Eco Ganesha
 - Promoting use of Jute bags etc.
 - Promoting Wealth out of Waste

22. Is there any arboretum in your college? If yes details of the trees planted.
No, we do not have arboretum in our college.
23. Are there any fruit yielding plants in your college? If yes details of the trees planted.
We have Guava, Sitaphal, Papaya and Mango trees in our college.
24. Are there any groves in your college? If yes details of the trees planted.
We do not have any groves in our college.
25. Is there any irrigation system in your college?
We do not have any irrigation system. The plants are watered with the help of water pipes.
26. What is the type of vegetation in the surrounding area of the college.
The college is located in close vicinity to Osmania University. The University campus is rich in flora and fauna.
27. What are the nature awareness programmes conducted in the campus?
Plantation programme is carried out annually during Haritha haram. The students developed the medicinal garden of the college. They are encouraged to give poster presentations and participate in quiz programmes conducted by the Ecoclub.
28. What is the involvement of students in the green cover maintenance.
The students actively involved in the plantation and maintenance of the college garden.
29. What is the total area of the campus under tree cover? Or under tree canopy?
Around 10% of the Campus area is under tree cover.
30. Share your ideas for further improvement of Green cover.
- Establishment of a Vermicompost Unit
 - Introduction of Drip irrigation
 - Recycling of the water.
 - Establishment of a Birthday garden where the Faculty and students are encouraged to plant and maintain a tree/plant on their birthdays.

Auditing for Carbon Footprint

Introduction

Carbon Footprint refers to the potential climatic impact (Global Warming) of the Greenhouse Gases (GHG) emitted directly or indirectly due to an organization's activities. A Carbon Footprint Disclosure of any educational institution is very important to understand such that its key emission sources can be identified and necessary mitigation measures can be adopted for carbon reduction. Vehicular emission is the main source of carbon emission in the campus.

Methodology adopted

Questionnaire – The data is collected through detailed questionnaire survey method.

Questionnaire

1. What is the total strength of students and teachers in your College?
 - No. of Students: 1791 No. of Teachers: 39 No. of Non-teaching staff: 19 Total:1849
2. Total Number of vehicles used by the stakeholders of the college. (Per day):
 - 42
3. No. of cycles Used:
 - Nil
4. No. of two wheelers used (average distance travelled and quantity of fuel and amount used per day)
 - Two wheelers used: 30, Avg distance 15KM/day, 11.25 Litres per day, Rs. 1125/-
5. No. of cars used (average distance travelled and quantity of fuel and amount used per day)
 - Total 12 cars used per day, average of 15 KMs, 20 Litres per day, Rs.2000/day
6. No. persons using common (public) transportation (average distance travelled and quantity of fuel and amount used per day)
 - About 1000 (Students) people use Public transport
7. No. of persons using college conveyance by the students, non-teaching staff and teachers (average distance travelled and quantity of fuel and amount used per day):
 - At present the college do not have any conveyance facility; Nil
8. Number of parent-teacher meetings in a year? Parents turned up (approx.):
 - 2/year (50-60 Approx.)
9. Number of visitors with vehicles per day?
 - 2 /day

10. Number of generators used per day (hours). Give the amount of fuel used per day.

- Nil

11. Number of LPG cylinders used in the canteen (Give the amount of fuel used per day and amount spent).

- At present there is no Canteen; Nil

12. Quantity of kerosene used in the canteen/labs (Give the amount of fuel used per day and amount spent).

- At present there is no Canteen; Nil

13. Amount of taxi/auto charges paid and the amount of fuel used per month for the transportation of vegetables and other materials to canteen.

- At present there is no Canteen; Nil

14. Amount of taxi/auto charges paid per month for the transportation of office goods to the college.

- Rs.2000 (Approx.)

15. Average amount of taxi/auto charges paid per month by the stakeholders of the college.

- Rs.1300/day

16. Use of any other fossil fuels in the college (Give the amount of fuel used per day and amount spent).

- Nil

17. Suggest the methods to reduce the quantity of use of fuel used by the stakeholders/students/teachers/non-teaching staff of the college.

- Take advantage of natural sunlight.
- Switch Over to LEDs or CFLs.
- Encouraging students to recycle.
- Encouraging staff to use public transport, carpooling.
- Encouraging students to commute using bicycles.

18. Are the Rooms in Campus are Well Ventilated?

- Yes

19. Window Floor ratio of the Rooms:

- Number of Floors – 3
- No. of windows per floor 20 (total 60)
- Ratio 20:1

REPORTS

Water management

SL NO	PARAMETERS	Response	Remarks
1	Source of water	GHMC tap water, Bore well	
2	No of Wells	0	
3	No of motors used	01	
4	Horse power – Motor	03 HP	
5	Depth of well –Total	NA	
6	Water level	NA	
7	Number of water tanks	6	
8	Capacity of tank	6500Ltr	
9	Quantity of water pumped every day	3000Ltrs	
10	Any water wastage/why?	Nil	
11	Water usage for gardening	2000 Ltrs	
12	Waste water sources	Nil	
13	Use of waste water	NA	
14	Fate of waste water from labs	Sent to drainage	
15	Whether waste water from labs mixed with ground water	NA	
16	Any treatment for lab water	No	
17	Whether any green chemistry method practiced in labs	NA	
18	No of water coolers	No	
19	Rain water harvest available?	Yes	
20	No of units and amount of water harvested	2 units, 2*2000 Ltrs	
21	Any leaky taps	No	
22	Amount of water lost per day	Nil	
23	Any water management plan used?	Rain Harvest Pits	
24	Any water saving techniques followed?	No leakage of water taps	
25	Are there any signs reminding peoples to turn off the water?	Yes	

Results of water quality

Parameters	Bore Well water	Municipal Tap water	Standard value (BIS)
Dissolved Oxygen (mg/l)			6-8
Acidity (mg/l)			200
Alkalinity (mg/l)			200
Chloride (mg/l)			250
Hardness (Total)			200
Conductivity (μ s)			
Ph			6.5-8.5
Total Dissolved Solids (ppm)			500
Salinity (ppt)			
Total coliform			0
Fecal coliform			0

***Analysis report awaited from Ground Water Department, Khairthabad**

Energy Audit Report

S.NO	Electrical device/ items	Number	Power	Total Power	KW	Operation usage time (hr/day)	kW/hr	No of days in month	Total consumption per month
1	LED Tubes	188	20	3760	3.76	3	11.28	20	225.6
2	Tube lights	43	40	1720	1.72	3	5.16	20	103.2
3	Projectors	8	280	2240	2.24	1	2.24	20	44.8
4	Fans	134	60	8040	8.04	3	24.12	20	482.4
5	Table fans	2	60	120	0.012	3	0.036	20	0.72
6	UPS	6	5000	30000	30	1	30	20	600
7	ACs	4	3000	12000	12	3	36	20	720
8	Refrigerator	2	741	1482	1.482	3	4.446	20	88.92
9	Exhaust fan	2	30	60	0.006	3	0.018	20	0.36
10	Photocopiers	3	200	600	0.6	2	1.2	20	24
11	Printers	8	60	480	0.48	1	0.48	20	9.6
12	Speakers Box (12 inches)	1	80	80	0.08	1	0.08	20	1.6
13	Speakers Box (4 x 12 inches)	2	60	120	0.12	1	0.12	20	2.4
14	Amplifier	3	100	300	0.3	1	0.3	20	6
15	Podium mike	1	60	60	0.06	1	0.06	20	1.2
16	Card less mike	2	5	10	0.01	1	0.01	20	0.2
17	Collar mike	1	5	5	0.005	1	0.005	20	0.1
18	Computers	134	100	13400	13.4	2	26.8	20	536
19	TVs	2	100	200	0.2	1	0.2	20	4
20	Street lights	5	200	1000	1	10	10	30	300

Total Power Consumption Per Month: 3151.1 Units (KWh)

Waste management

Approximate quantity of waste generated per day (in kg)

<i>Office</i>				
Approx	Biodegradable	Non - Biodegradable	Hazardous	Others
<1Kg				
2-10Kg	2KG	NIL	NIL	
>10Kg				

<i>Laboratories</i>				
Approx	Biodegradable	Non - Biodegradable	Hazardous	Others
<1Kg	NIL			
2-10Kg				
>10Kg				

<i>Canteen/kitchen</i>				
Approx	Biodegradable	Non - biodegradable	Hazardous	Others
<1Kg	NIL			
2-10Kg				
>10Kg				

How the waste generated in the college is managed?

	Yes/ No	Remark
A)Composting/ Vermicomposting	YES	
B)Recycling	NO	
C)Reusing	NO	
D)Other ways		

Waste generated in the college?

E-waste	NIL	
Hazardous waste	NIL	
Solid waste	10Kg perweek	
Dry leaves	2Kg per day	
Canteen waste	NIL	
Liquid waste	Negligible	
Glass	NIL	
Unused Equipment	NIL	
Napkins	2Kg per month	
Others (specify)		

Do you use recycled paper in college ?	NO
Any waste management methods used ?	Composting Tie up with ITC WoW for recycling the stationery

**Green Campus Management
Annexure - 1**

<i>S.No</i>	<i>Name of the Plant</i>	<i>Common name</i>	<i>Number</i>	<i>Habit</i>
1	<i>Cassia siamea</i>	<i>Senna</i>	25	<i>Tree</i>
2	<i>Embllica officinalis</i>	<i>Amla</i>	5	<i>Tree</i>
3	<i>Citrus sps.</i>	<i>Lemon</i>	2	<i>Tree</i>
4	<i>Hibiscus rosasinensis</i>	<i>Shoe flower</i>	20	<i>Shrub</i>
5	<i>Gravillea robusta</i>	<i>Silver Oak</i>	25	<i>Tree</i>
6	<i>Terminalia catappa L.</i>	<i>Badam</i>	2	<i>Tree</i>
7	<i>Spathodeacampanulata</i>	<i>Fountain tree</i>	1	<i>Tree</i>
8	<i>Azadirachta indica</i>	<i>Neem</i>	4	<i>Tree</i>
9	<i>Bauhinia variegata</i>	<i>Orchid tree</i>	4	<i>Tree</i>
10	<i>Plumeria rubra</i>	<i>Champaka</i>	10	<i>Shrub</i>
11	<i>Codiaeum variegatum –</i>	<i>Garden croton</i>	10	<i>Shrub</i>
12	<i>Syngonium podophyllum</i>	<i>Arrow head</i>	10	<i>Shrub</i>
13	<i>Aglaonema commutatum</i>	<i>Chinese evergreen</i>	10	<i>Shrub</i>
14	<i>Acalypha wilkesiana</i>	<i>copper leaf</i>	10	<i>Shrub</i>
15	<i>Crossandra in fundibuliformis</i>	<i>Kanakambaram</i>	10	<i>Shrub</i>
16	<i>Ixora coccinea</i>	<i>Jungle flame</i>	15	<i>Shrub</i>
17	<i>Areca palm</i>	<i>Areca plant</i>	6	<i>Tree</i>
18	<i>Tecoma stans</i>	<i>Yellow bells</i>	4	<i>Tree</i>
19	<i>Nymphaea species</i>	<i>Water lilly</i>	10	<i>Hydrophyte</i>
20	<i>Aloe vera</i>	<i>Kalabanda</i>	2	<i>Herb</i>
21	<i>Ocimum sanctum</i>	<i>Tulasi</i>	4	<i>Shrub</i>
22	<i>Opuntia</i>	<i>Prickly pear</i>	1	<i>Shrub</i>
23	<i>Mangifera indica</i>	<i>Mango</i>	2	<i>Tree</i>
24	<i>Pongamia pinnata</i>	<i>Kanuga</i>	15	<i>Tree</i>
25	<i>Rosa grandiflora</i>	<i>Rose</i>	3	<i>Shrub</i>
26	<i>Saraka indica</i>	<i>Ashoka</i>	3	<i>Tree</i>
27	<i>Carica papaya</i>	<i>Papaya</i>	1	<i>Tree</i>
28	<i>Lawsonia inermis</i>	<i>Gorantaku</i>	1	<i>Shrub</i>
29	<i>Millingtonia hortensis</i>	<i>Indian cork tree</i>	2	<i>Tree</i>
30	<i>Syzygium cumini</i>	<i>Jamun</i>	1	<i>Tree</i>
31	<i>Jasmine grandiflorum</i>	<i>Jasmine</i>	1	<i>Tree</i>
32	<i>Tabernaemontana divaricata</i>	<i>Nandibatlu</i>	6	<i>Tree</i>
33	<i>Annona squamosa</i>	<i>Seethaphal</i>	1	<i>Shrub</i>
34	<i>Psidium guava</i>	<i>Guava</i>	2	<i>Tree</i>
35	<i>Plumaria pudica</i>	<i>Franghipani</i>	2	<i>Shrub</i>
36	<i>Senna Ariculata</i>	<i>Matura tea tree</i>	8	<i>Tree</i>
<i>Total</i>			238	

Annexure - 2

S.No.	Name of the plant	Common name	Family	Habit	No.
1.	<i>Tabebuia</i>	Trumpet tree	<i>Bignoniaceae</i>	Tree	5
2.	<i>Butea monosperma</i>	Flame of the forest	<i>Fabaceae</i>	Tree	2
3.	<i>Saraca indica</i>	Ashoka tree	<i>Fabaceae</i>	Tree	4
4.	<i>Solanum melangina</i>	Brinjal	<i>Solanaceae</i>	Shrub	4
5.	<i>Lycopersicon esculentum</i>	Tomato	<i>Solanaceae</i>	Shrub	4
6.	<i>Leafy vegetables (Mentha, palak, mint etc)</i>			Herbs	3 each
7.	<i>Latana camara</i>	lantana	<i>Verbenaceae</i>	Shrub	20
8.	<i>Tagetus erecta</i>	Marigold	<i>Asteraceae</i>	Shrub	20
9.	<i>Rose</i>	Rose	<i>Rosaceae</i>	Shrub	10
10.	<i>Nerium oleander</i>	Oleander	<i>Apocynaceae</i>	Shrub	20
11.	<i>Bougainvillea</i>	Paper flower	<i>Ncytaginaceae</i>	Shrub	10

Annexure – 3

S.No.	Common name	Botanical name	Family	No.
1	Ippa	<i>Madhuca longifolia</i>	<i>Sapotaceae</i>	1
2	Brahmi	<i>Bacopa monnieri</i>	<i>Plantaginaceae</i>	1
3	Kalabanda	<i>Aloe vera</i>	<i>Asphodelaceae</i>	1
4	Dawanam	<i>Artemisia pallens</i>	<i>Asteraceae</i>	2
5	Maruvam	<i>Origanum majorana.</i>	<i>Lamiaceae</i>	2
6	Karpur	<i>Cinnamomum camphora</i>	<i>Lauraceae</i>	1
7	Tulasi	<i>Ocimum sanctum</i>	<i>Lamiaceae</i>	10
8	Machipatram	<i>Artemisia princeps</i>	<i>Asteraceae</i>	2
9	Maredu	<i>Aegle marmelos</i>	<i>Rutaceae</i>	1
10	Eucalyptus	<i>Eucalyptus citriodora</i>	<i>Myrtaceae</i>	1
11	Blackpepper	<i>Piper nigrum</i>	<i>Piperaceae</i>	1
12	Tippa teega	<i>Tinospora cordifolia</i>	<i>Menispermaceae</i>	3
13	Lavender	<i>Lavandula</i>	<i>Lamiaceae</i>	1
14	Moringa	<i>Moringa oleifera</i>	<i>Moringaceae</i>	1
15	Scented Geranium	<i>Geranium</i>	<i>Geraniaceae</i>	1
16	sadapak	<i>Ruta graveolens</i>	<i>Rutaceae</i>	1
17	Ajwain	<i>Trachyspermum ammi</i>	<i>Apiaceae</i>	3
18	Aswagandha	<i>Withania somnifera</i>	<i>solanaceae</i>	2
19	Ranapala	<i>Bryophyllum</i>	<i>Crassulaceae</i>	1
20	Rajanigandha	<i>Agave amica</i>	<i>Asparagaceae</i>	2
21	Aparajitha	<i>Clitoria ternatea</i>	<i>Fabaceae</i>	1
22	Lemon grass	<i>Cymbopogon citratus</i>	<i>Poaceae</i>	4
23	Snake plant	<i>Sansevieria</i>	<i>Asparagaceae</i>	1
24	Amla	<i>Phyllanthus emblica</i>	<i>Phyllanthaceae</i>	1
25	Chinese evergreen	<i>Aglaonema</i>	<i>Araceae</i>	1
26	Nalleru	<i>Cissus quadrangularis</i>	<i>Vitaceae</i>	1
Total				47

Total types of plants planted 26

Total number of plants planted 47

Carbon Footprint - Report

1. Petrol used by two wheelers/day–11.25 L
(Per person to and fro 40 kms=1L)
2. Fuel used by four wheelers (12 Persons) - 20L
(Per person to and fro 40 kms=2L)
3. Fuel for persons (total 1791 persons) travelling by common
Transportation =36 L (4L x 50 persons)

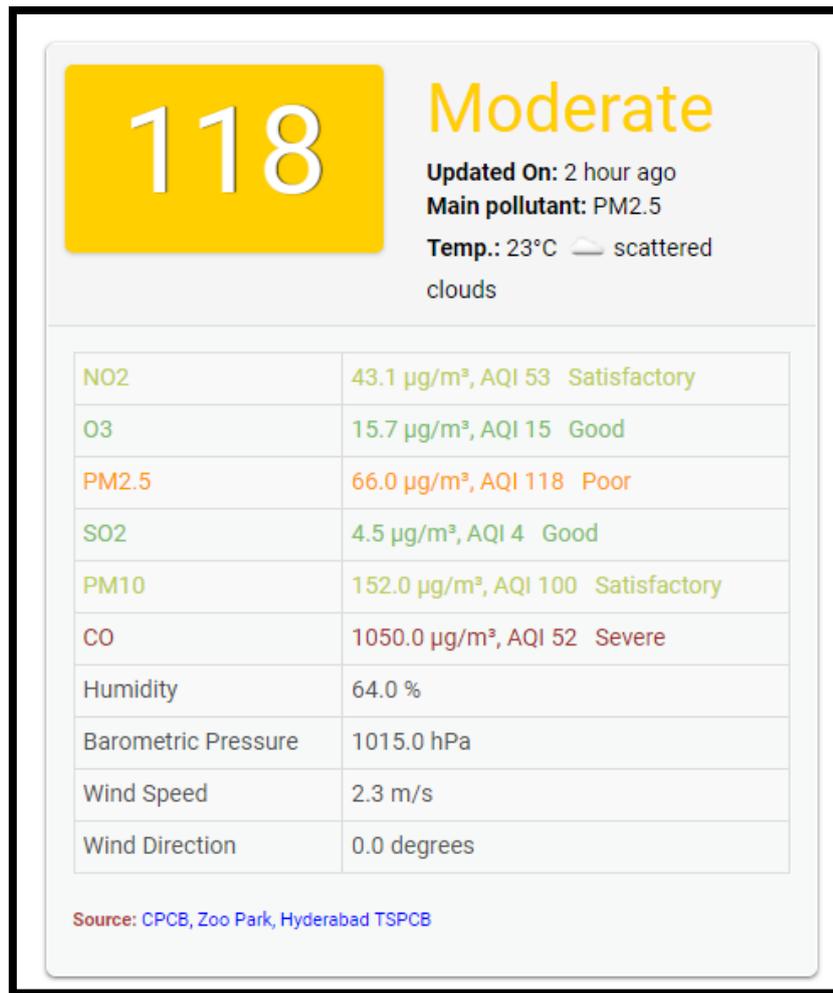
Total fuel cost per day for transportation =Rs. 7195.75/- (67.25 L x Rs 107)

Cost of stakeholder transportation per month (Rs7195.75. x24 days)- Rs.172698/-

Faunal diversity in college campus (with photographic evidence)

Faunal Group	Scientific name	Number (If enumeration is done)	Seasonality
Spiders	<i>Misumena vatia</i> <i>Pholcus phalangioides</i> <i>Artoriopsis expolita</i> <i>Astia hariola</i>		
Moths & Butterflies	<i>Danaus plexippus</i> <i>Cydalima perspectalis</i> <i>Australothis rubescens</i> <i>Talicauda nyseus</i>		
Other insects (Dragon flies, Bees, Wasps, Bugs, and Beetles etc)	<i>Pantala flavescens</i> <i>Pachydiplax longipennis</i> <i>Ceriagrion coromandelianum</i> <i>Lucilia sericata</i> <i>Chrysosoma spp.</i> <i>Oryctes nasicornis</i> <i>Apis mellifera</i> <i>Plecia nearctica</i> <i>Leucoma salicis</i>		
Annelids	<i>Pheretima posthuma</i>		
Other Arthropods	<i>Periplaneta americana</i>		
Amphibians	<i>Rana tigrina</i>		
Reptiles	<i>Calotes versicolor</i> <i>Hemidactylus</i>		
Birds	<i>Columba livia</i>		
Mammals	<i>Felis catus</i>		
Any other (Specify)	<i>Limnea Stagnalis</i> (Pond snail)		

Air Quality Determination

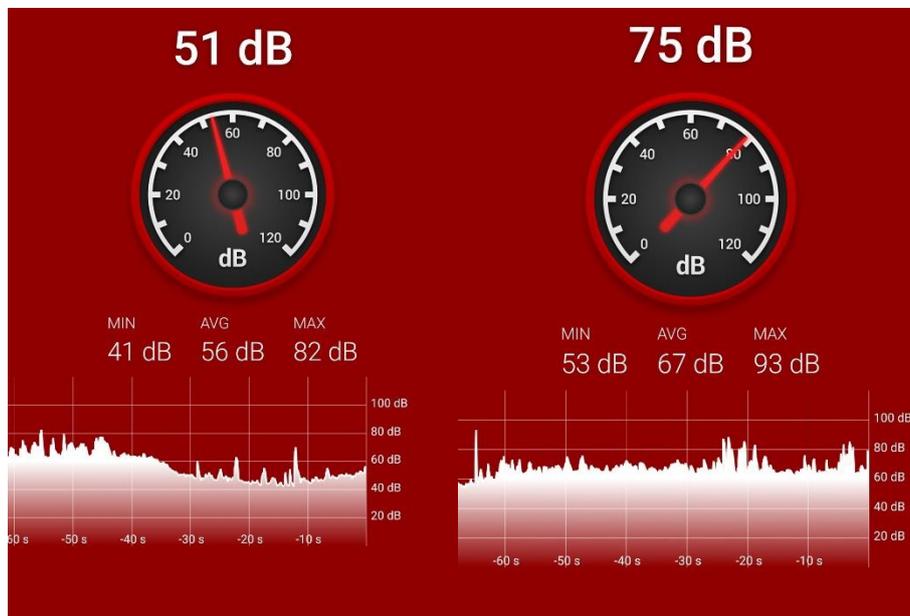


Measurements of Noise level in and around the college

S.No.	Place	Measurement Duration in Sec.	Minimum dBA	Max dBA	Avg dBA
1.	Library	60	41	82	56
2.	Playground	60			
3.	Auditorium	60			
4.	Science block	60	53	93	67

Library

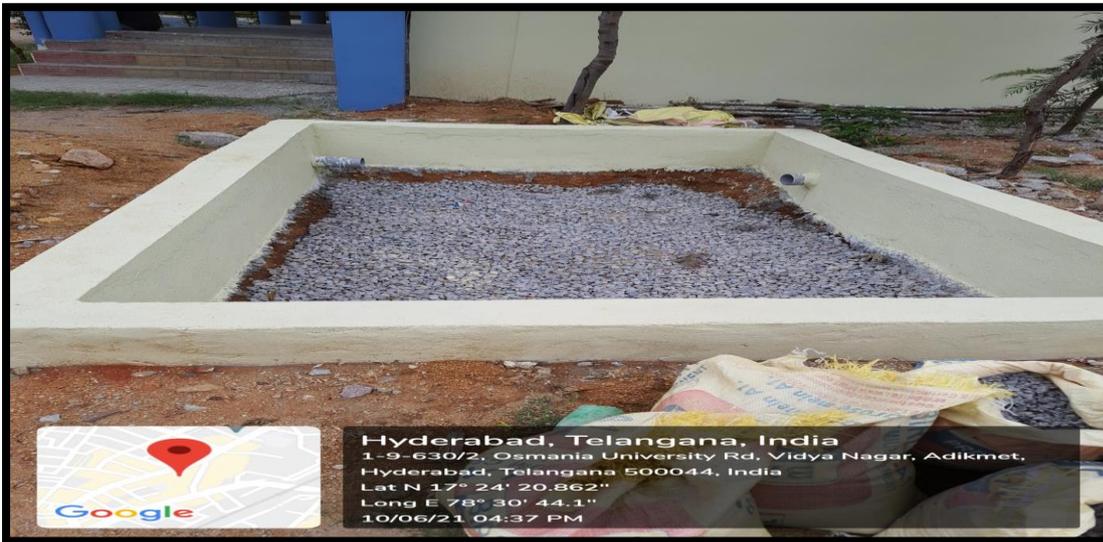
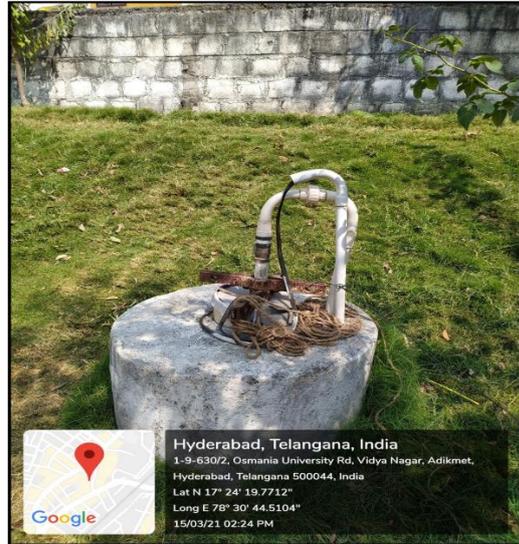
Science Block



The Auditorium and Play ground are not in use presently, as the institution has reopened recently and examinations are being held for the students.

Photographic Evidences

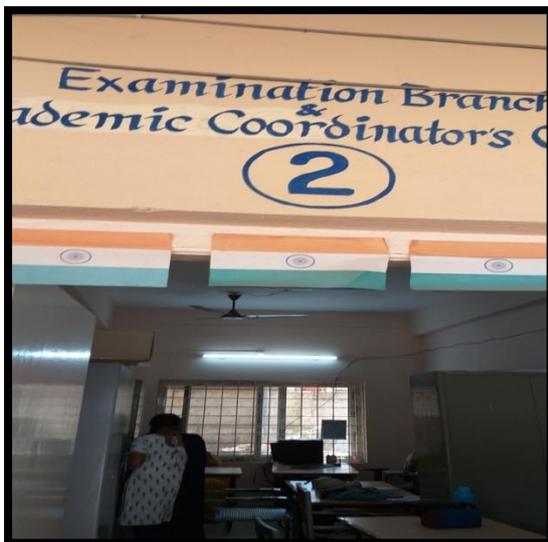
Water Management



Poster presentation on Water Conservation



Energy Management (LED Lights)



Waste Management

Compost pit



Incinerator

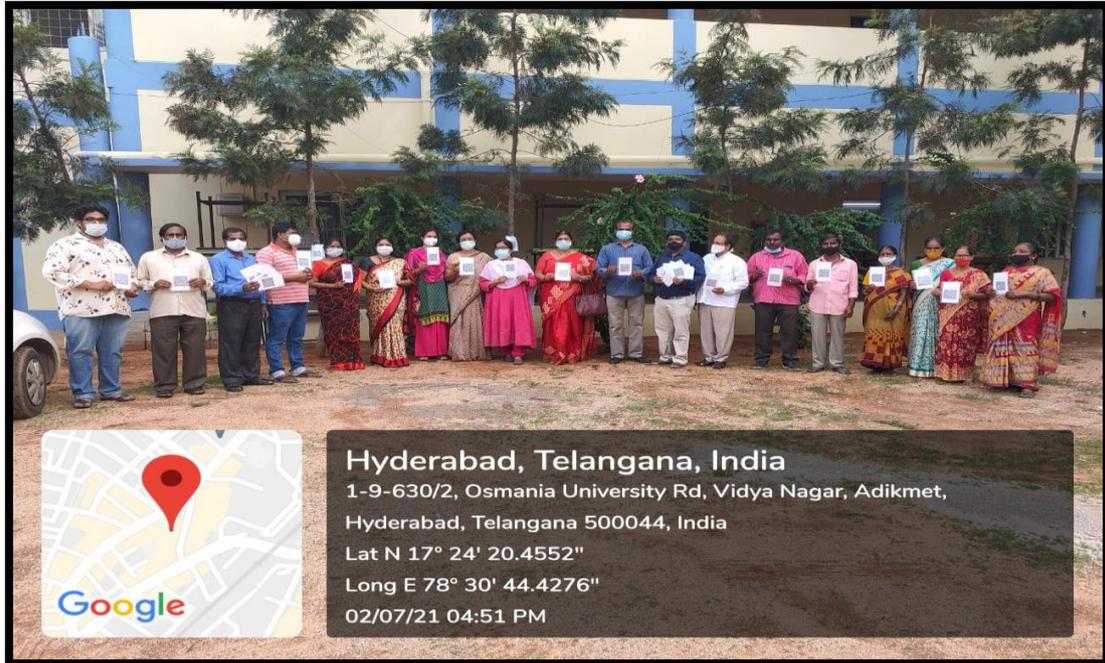


Workshop on Waste Management

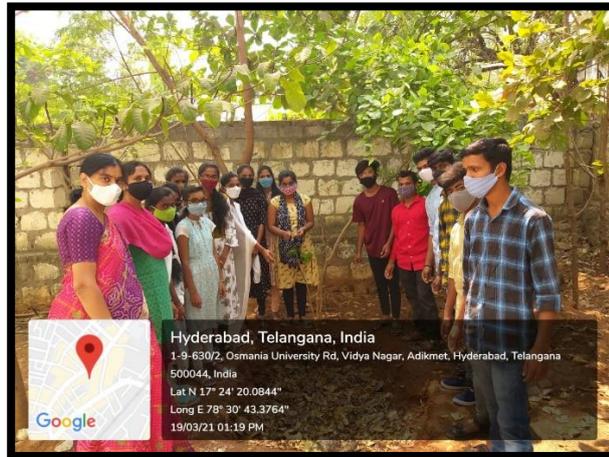


Green Campus Management

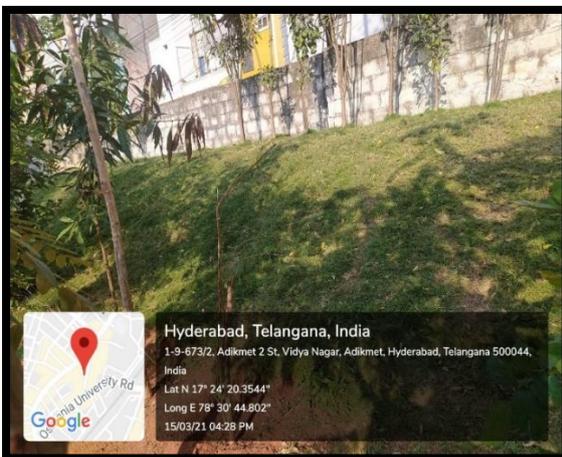
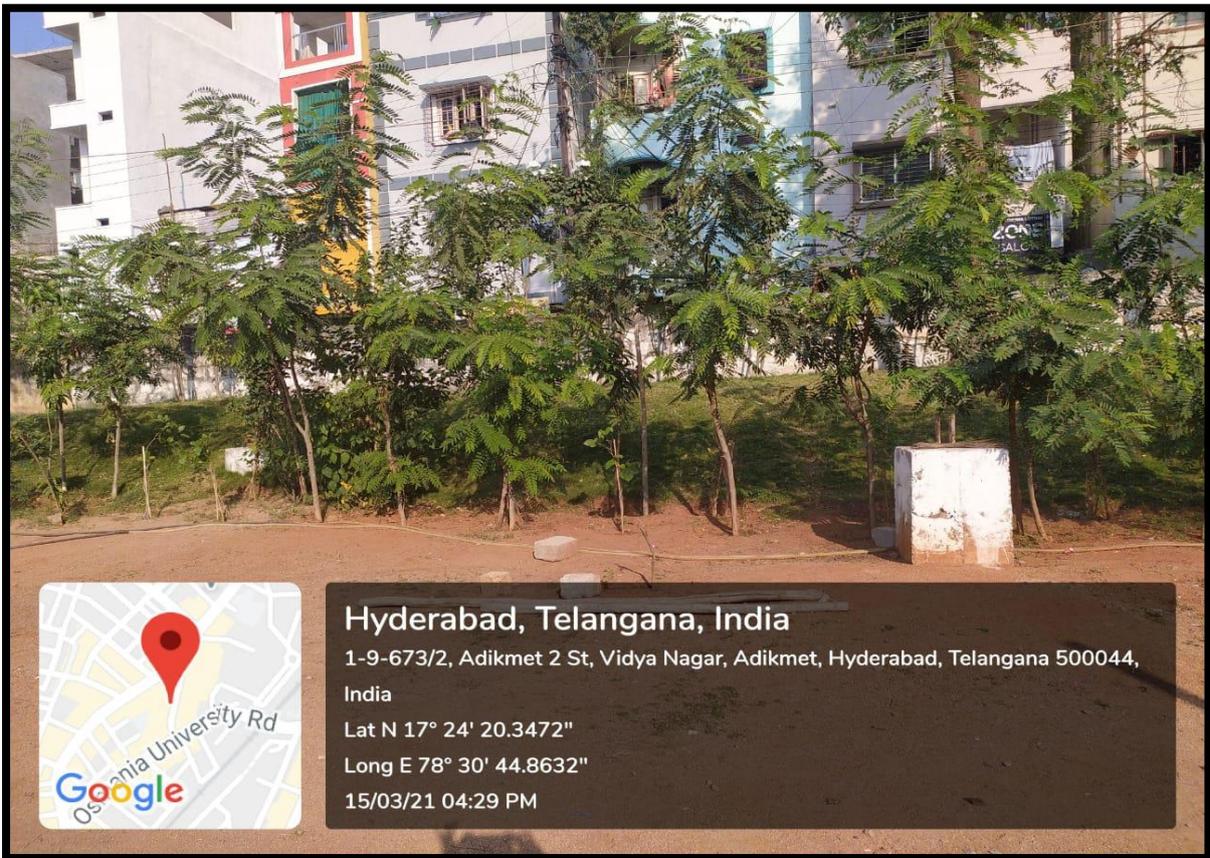
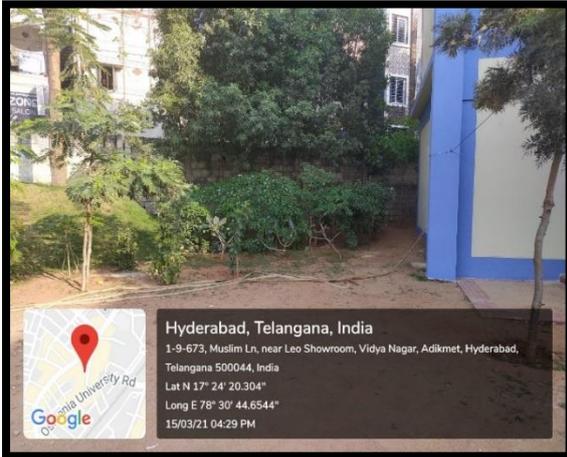
QR Coding of plants

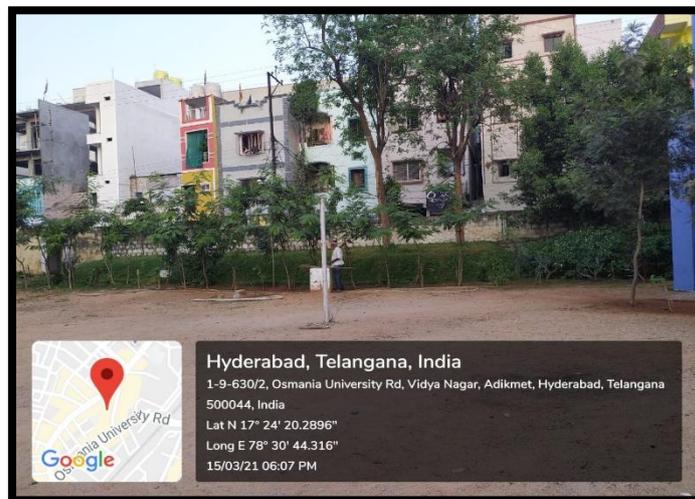
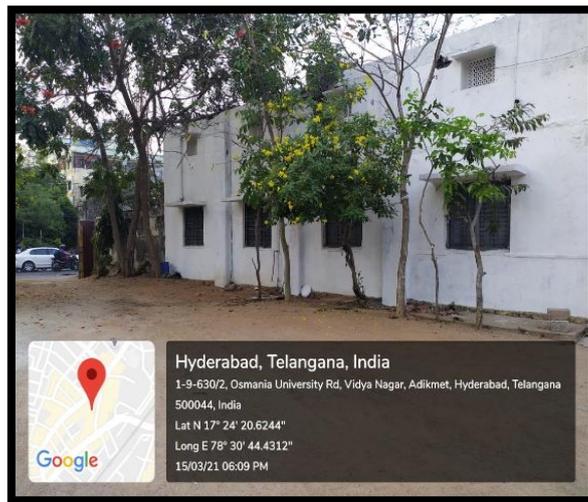
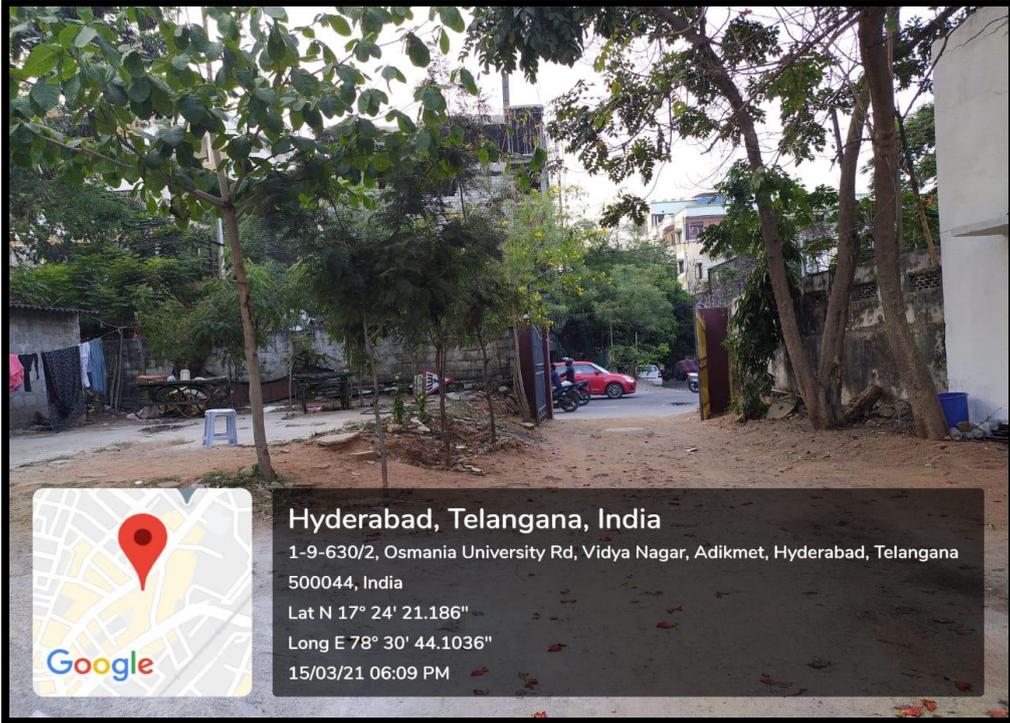


Preparation of compost in Compost pit



Landscaping in College campus



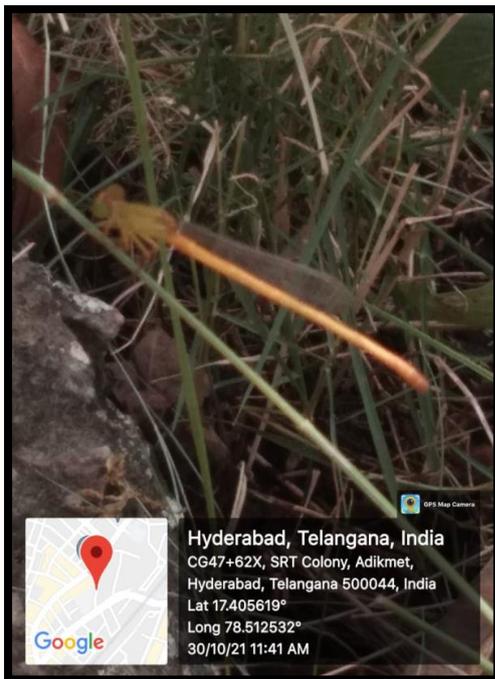


Faunal Diversity

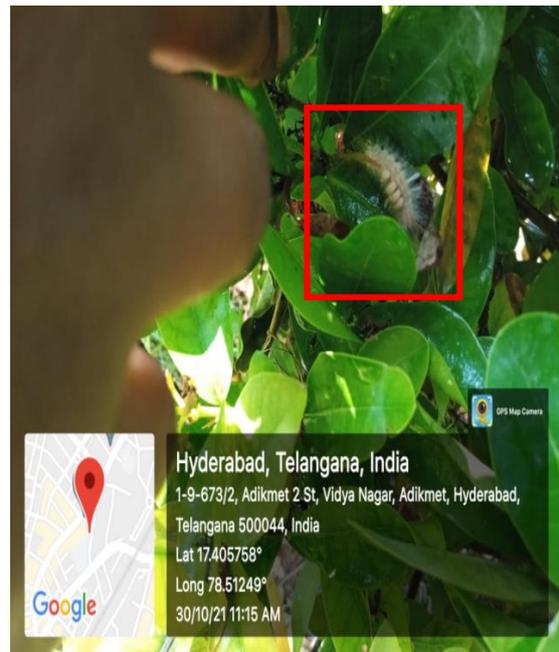
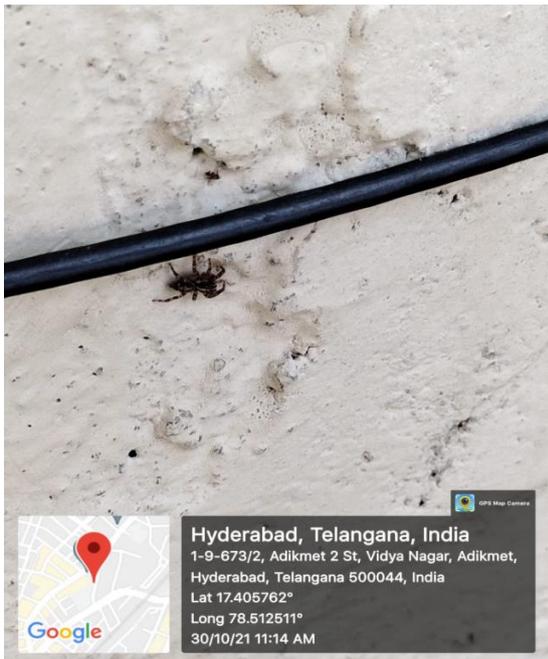
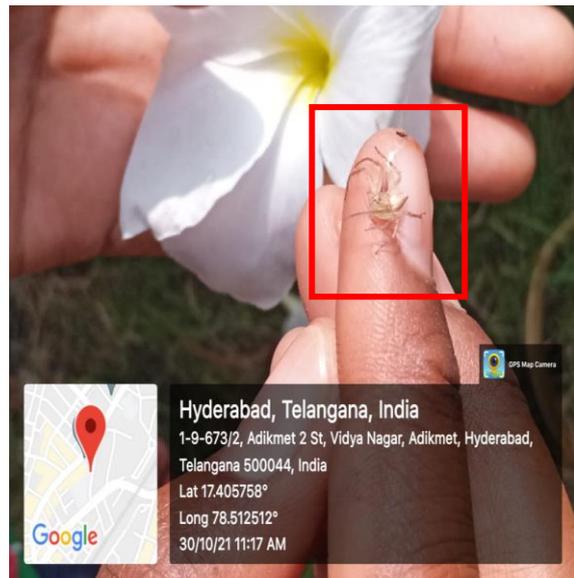
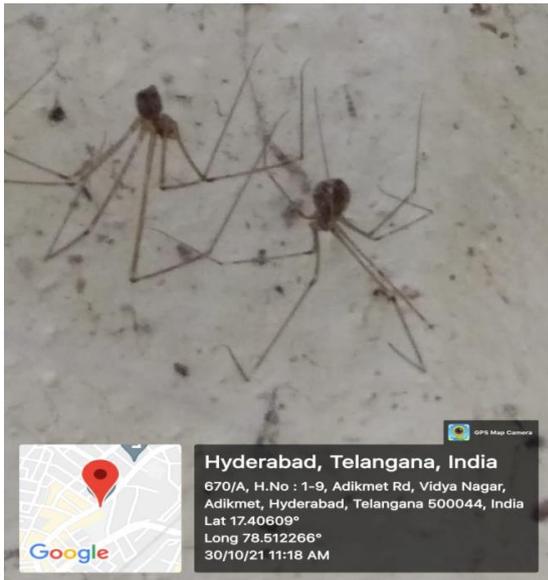
Molluscs – *Limnea stagnalis*



Damsel flies- *Ceragrion coromandelianum*



Arachnids



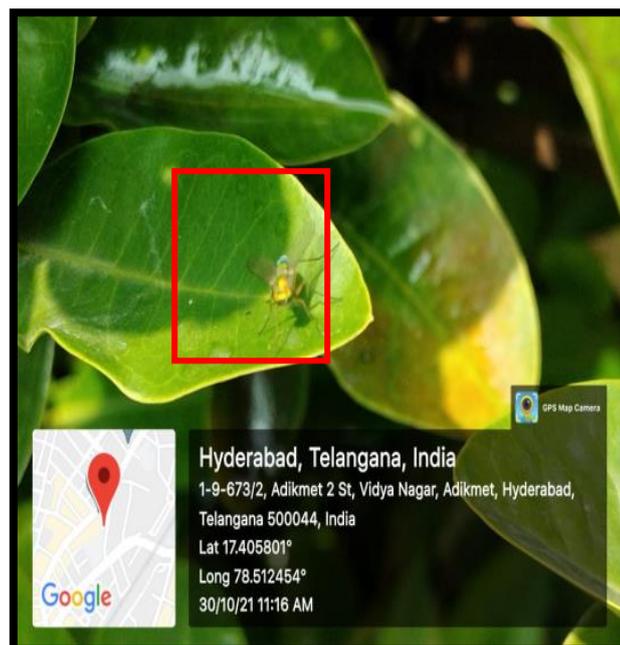
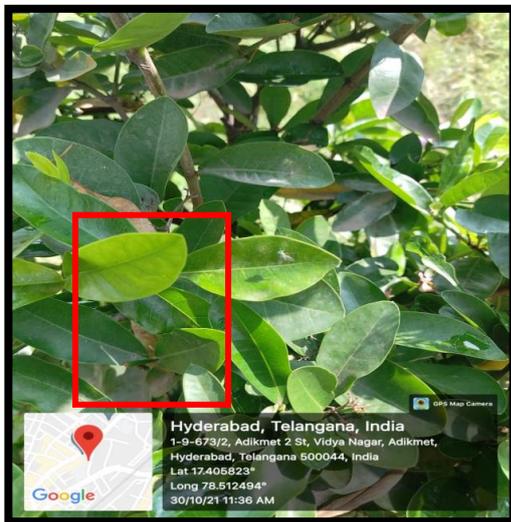
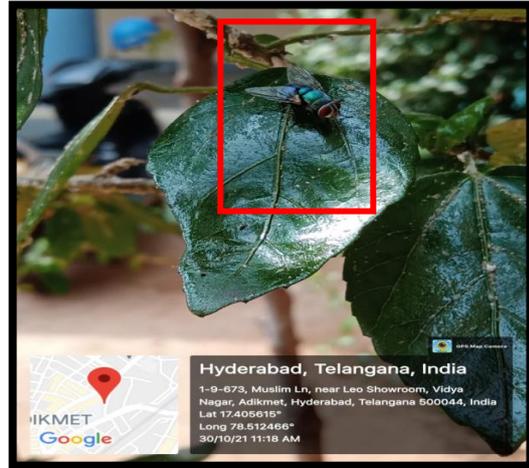
Dragonflies



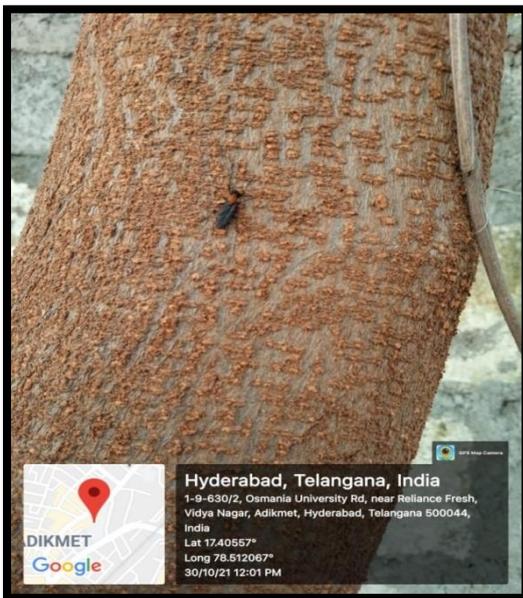
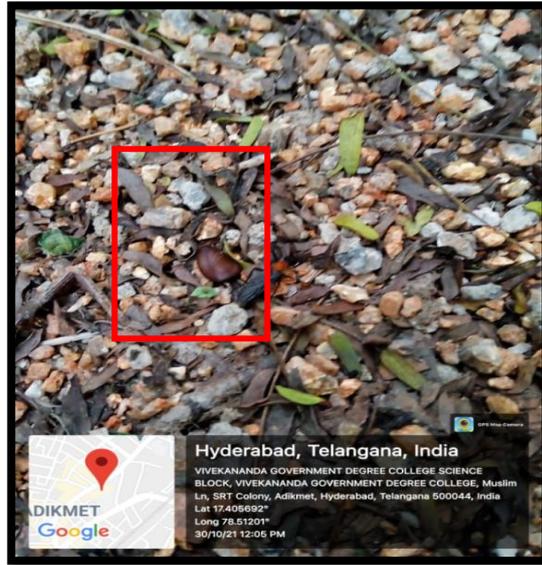
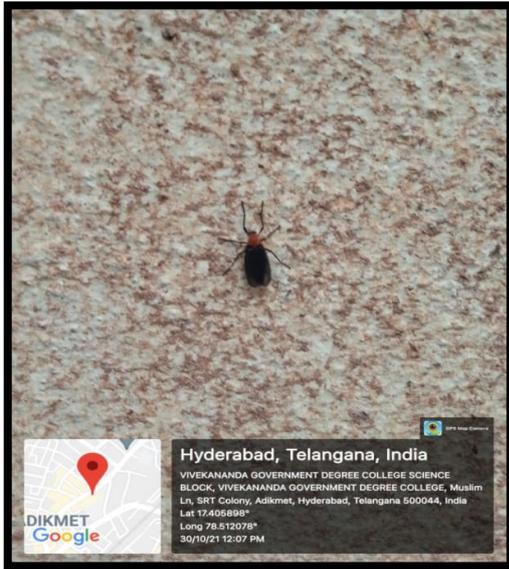
Pantala flavescens

Pachydiplax longipennis

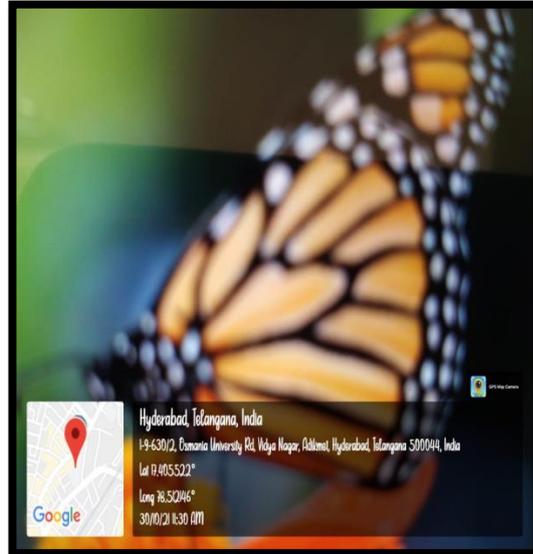
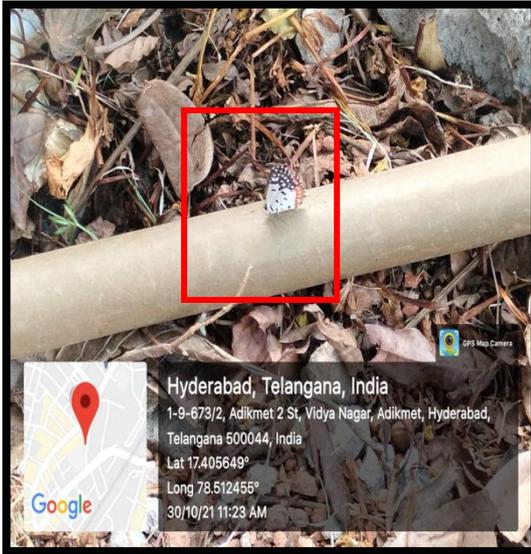
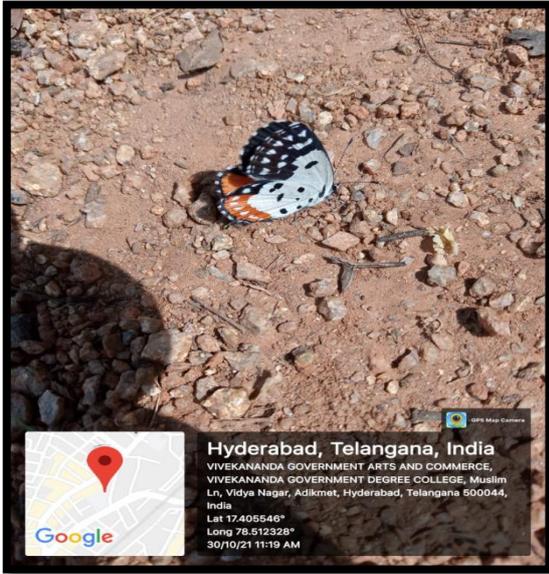
Flies



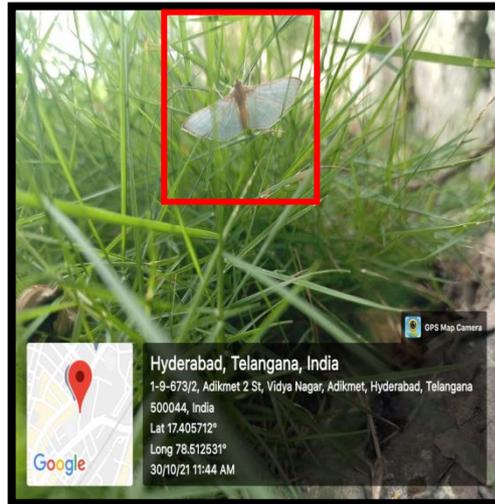
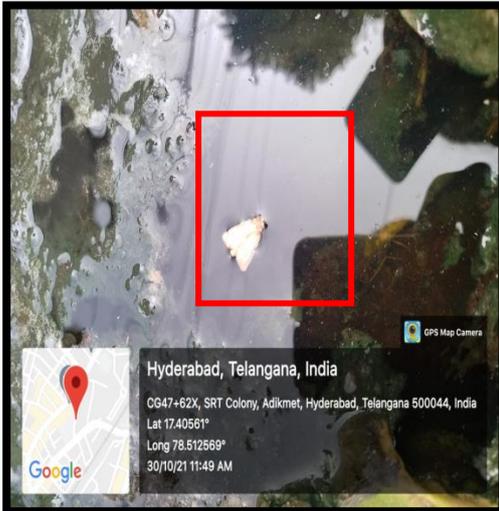
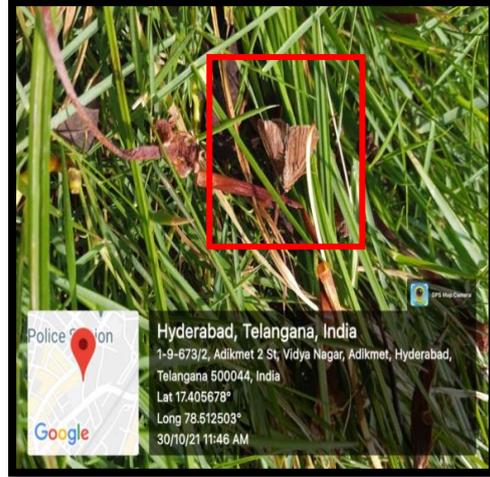
Bugs



Butterflies



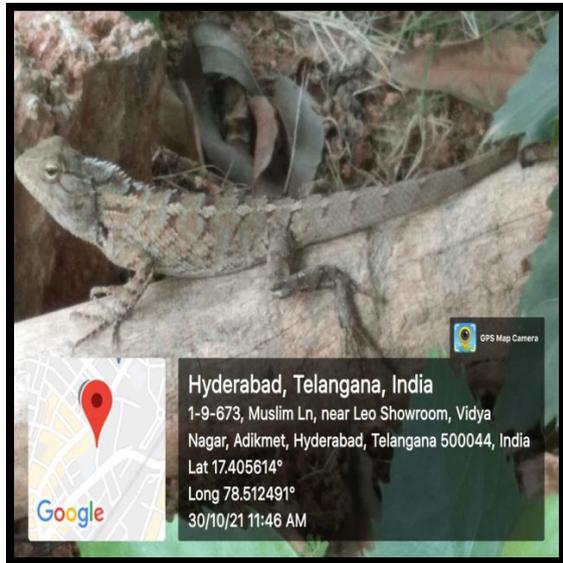
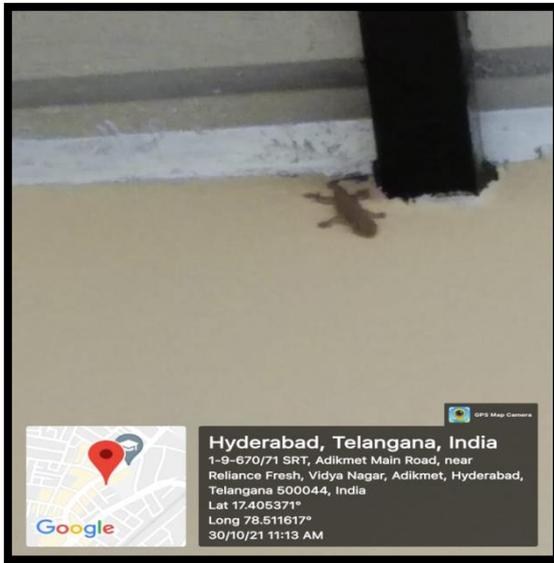
Moths



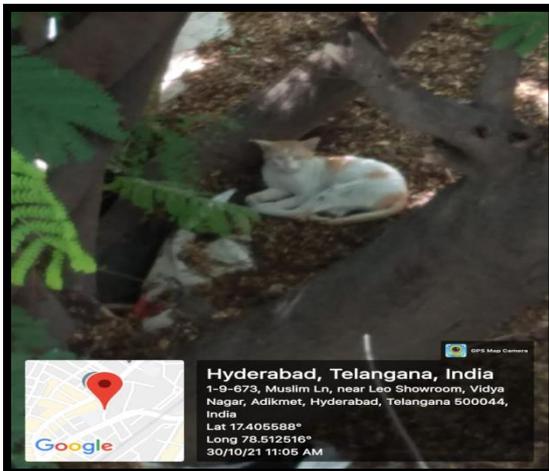
v



Reptiles



Mammals



Aves

Suggestions and Recommendations given by the Internal Audit Committee

Water Management

- Waste Water treatment facility can be introduced, so that the treated waste water can be used for Gardening.
- Automatic switching system can be installed for pump sets used for overhead tanks filling.
- Display boards against the misuse of water must be more prominent.

Energy Management

- Solar modules can be installed wherever possible in the college. They can be used for the ample production of electricity.
- Energy efficient fans can replace the older generation fans.
- Regular monitoring of the electric equipment and replacement of damaged (if any) should be taken up as priority.
- Solar powered street lights and LED Display boards can be installed.

Waste Management

- Encouraging staff and students to use the biodegradable materials.
- Try to achieve the goal of “plastic free campus”
- Recycling and composting must be done in a systematic manner.

Green campus management

- Planting a greater number of pollution control trees/plants as the college is centrally located and there is lot of vehicular traffic in vicinity.
- Developing organic vegetable garden.

Carbon foot printing

- College can promote car and bike pooling system. Teachers/ students coming from the same area share their vehicles to reach the college. This reduces the number of private vehicles used in the college campus.