



||Jai Sri Gurudev||

Sri Adichunchanagiri Shikshana Trust ®

SJB INSTITUTE OF TECHNOLOGY

(A Constituent Institution of BGS & SJBIT Group of Institution & Hospitals)
No. 67, BGS Health & Education City, Dr. Vishnuvardhan Road, Kengeri, Bengaluru - 560 060

Approved by AICTE - New Delhi.

Affiliated to Visvesvaraya Technological University, Belagavi,

2(f) and 12(B) recognized by UGC, New Delhi.

Accredited by NAAC, Accredited by NBA. Certified by ISO 9001-2015

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

Commitment to sustainability of green environment is expressed in SJBIT campus in many ways. To reduce the negative impact of Environment College has taken steps like conducting Green Audit every year. This strives in keeping the Eco –friendly atmosphere in the campus. The Green Audit is helping in upgrade the environment condition in and around the campus. It is carried out by performing tasks like Solid waste management, Energy conversation and sewage treatment plant to turn in to a better environmental friendly Institute.

The college takes initiatives on following aspects such as

1. Solid waste management
2. Liquid waste management
3. Bio medical waste management
4. E-Waste management

The approaches deployed in the institute on waste management are

Solid Waste Management

The solid waste management is an area which has drawn attention in the urban areas. In this context a project was conceptualized with minimal investment. The model developed helps in evaluating the amount of food waste which could be converted for generation of biogas and the remaining will be sent for pig feed.



Fig: Representation of digester after increasing the food waste concentration

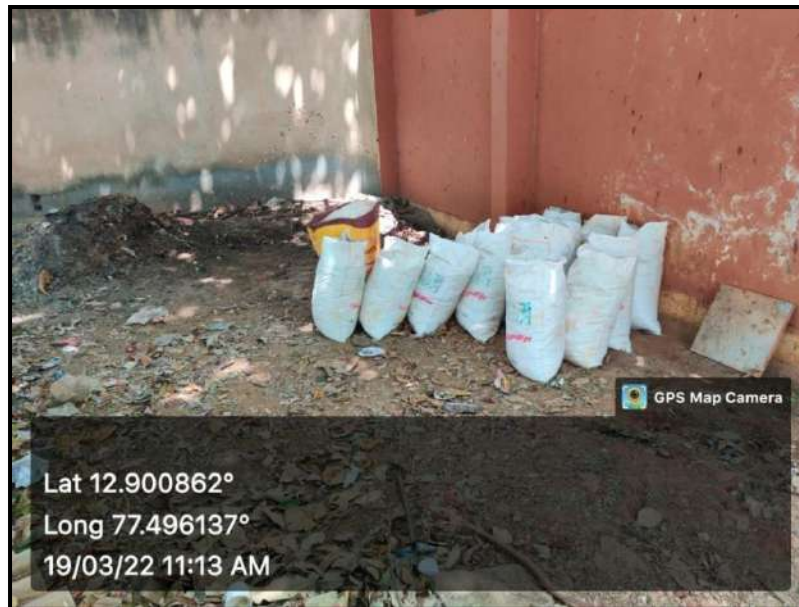


Fig: Collection of waste produced in campus

Liquid waste management

The waste-water generated from various sources in the college are managed efficiently through the waste-water treatment plant installed in the campus. The capacity of the treatment plant is 550KLD. The plant has primary, secondary and tertiary units to purify the wastewater. The treated water is tested in the laboratory to ensure for the quality. The treated water is used for the plants and gardening.



Fig: Waste Water treatment plant

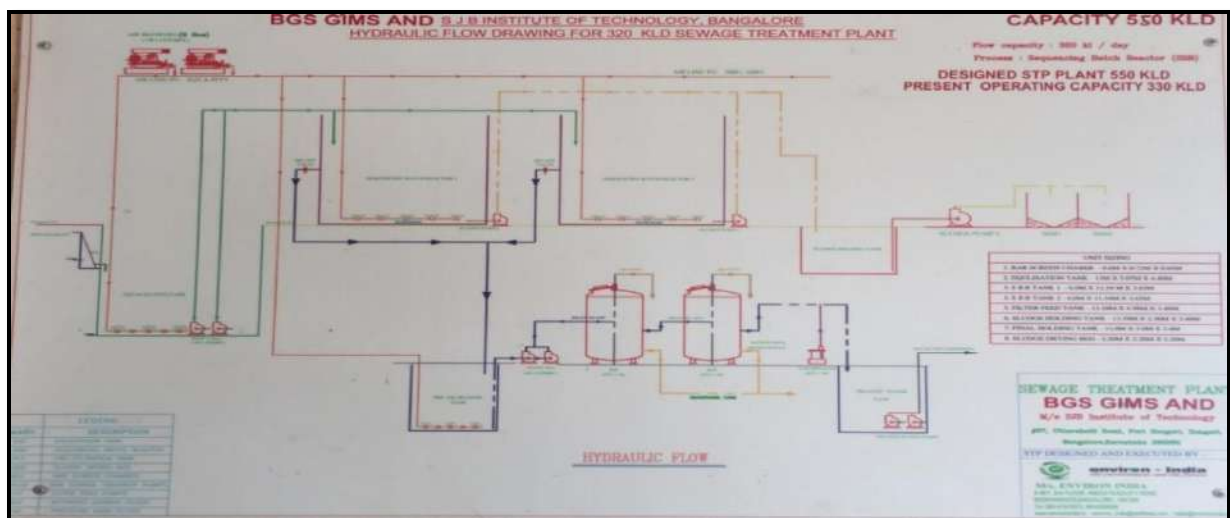


Fig: Flow draw of Sewage Treatment Plant

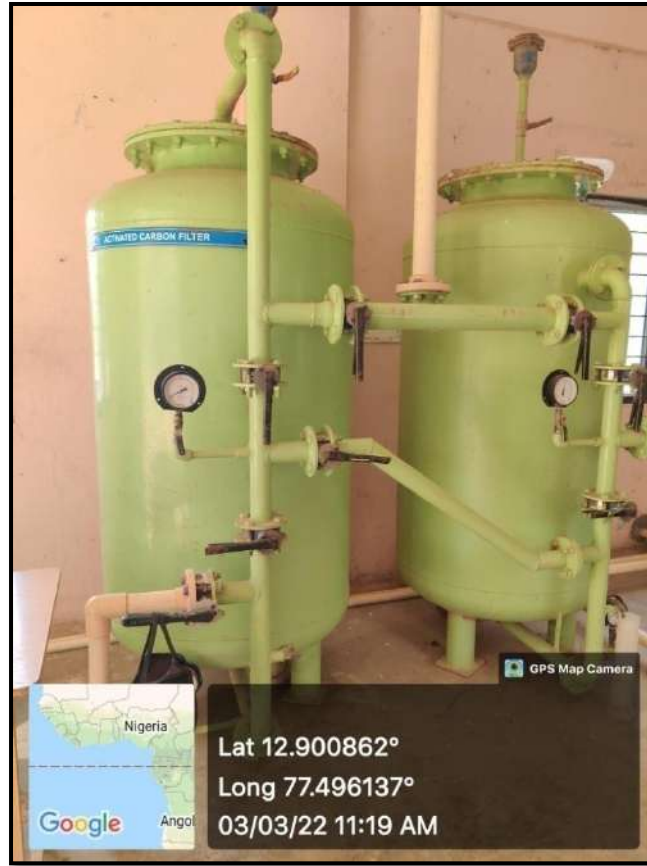


Fig: Sewage Treatment Plant Unit

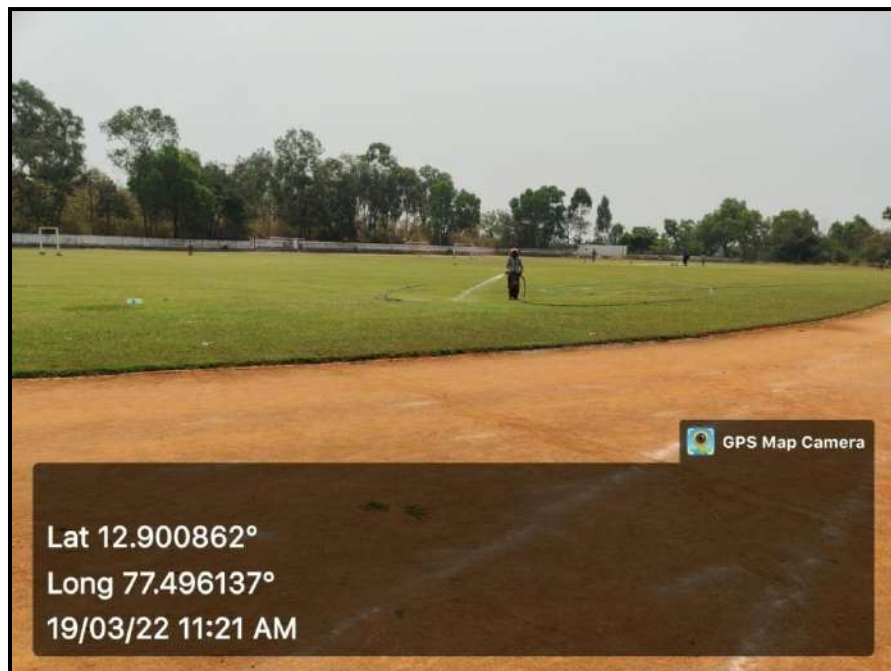


Fig: Treated water for gardening

The rain water collected from the catchment areas of the campus are effectively made use by sending partially to the treatment plant. There by diluting the wastewater helps in reducing the load on the treatment plant. The remaining water is allowed to the abandoned boreholes in recharging the ground water table.

Bio-Medical Waste Management

The quantity of waste originated from the institution is very minimal. Hence this waste is out sourced to collect with the hospital waste.

E Waste management

The E waste management consisting of obsolete computers and other waste generated from the electronic equipment are auctioned to the authorized dealers in E-waste. These materials are removed and disposed as per norms. The institution encourages extensive use of E-communication for paperless environment.

Waste recycling system

The campus houses number of trees helping in creating the green environment by reducing the carbon dioxide production. The building construction was done without uprooting trees. The withered leaves of these trees have been made use in preparing the compost. For aerobic decomposition of the waste, tanks have been built at various places. The different sizes of the tank mobilize compost amounting to 100kgs.



Fig: Composting yard in the campus

Hazardous chemicals and radioactive waste management

The chemical waste generated in the campus are properly collected and disposed by the specified agency. There is no radio-active waste generated in the institution.

Sanitary Napkin Vending and Disposal Machine

Availability of quality Sanitary Napkins through Sanitary Napkin Vending machines and ensuring safe and environment friendly disposal of use sanitary Napkins in girl's hostel

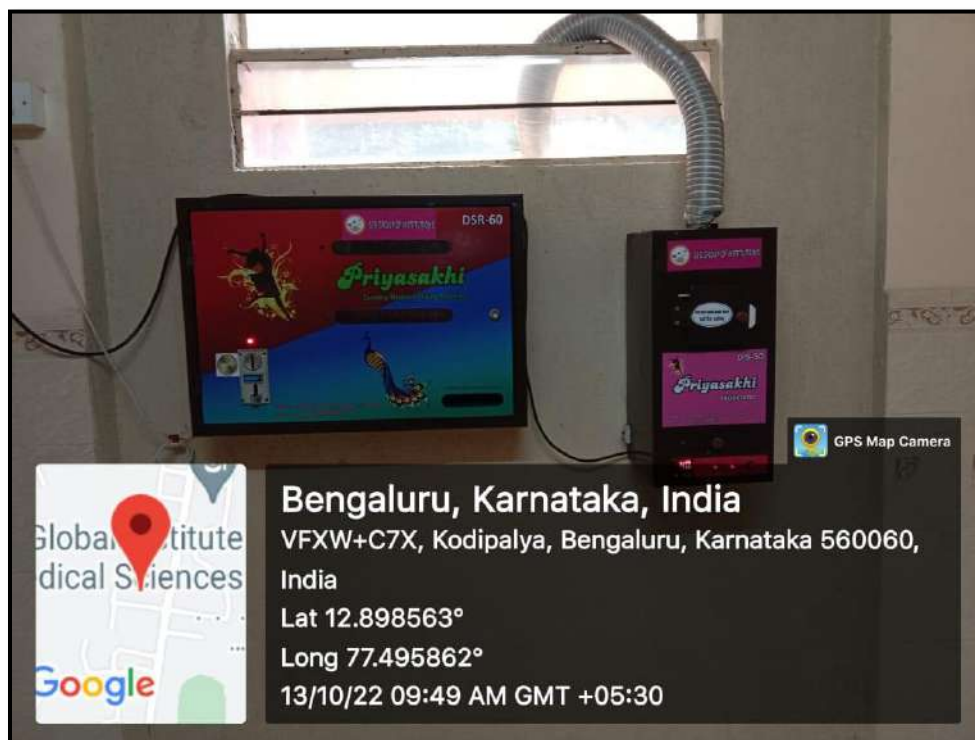


Fig: Sanitary Napkin Vending and Disposal Machine

Original



ENVIRON INDIA

#49/1, 2nd floor, Anees Plaza, R V Road, Basavangudi, Bangalore - 560004

Ph: 9916506558 / 080-41570072 / 080-41699599 / habib@environindia.in / www.environindia.in

| | | |
|--------------------------------------|------------------------------|------------------|
| Bill To : | Date: | 07.06.2022 |
| M/s. SJB Institute of Technology, | Invoice no # | GST/2022-23/0071 |
| No. 67, BGS Health & Education City, | Invoice Type | SERVICES |
| Uttarahalli Road, Kengeri | Reverse Charge (Y/N): | No |
| Bengaluru, Karnataka 560060 | | |

| | |
|------------------|---|
| Ship To : | M/s. SJB Institute of Technology, |
| | No. 67, BGS Health & Education City, Uttarahalli Road, Kengeri, Bengaluru, Karnataka 560060 |

| Sl. No. | Description | HSN Code | Qty (Nos.) | Unit Cost in INR | Amount in INR |
|---------|--|----------|------------|------------------|---------------|
| 1 | Comprehensive annual Operation & Maintenance of sewage treatment plant of capacity 330 KLD for the Month of May 2022 | 9994 | 1 | 60,000.00 | 60,000 |

For SJB Institute of Technology

Managing Director

ENVIRON INDIA
49/1, 2nd Floor, Anees Plaza,
R.V. Road, Basavanagudi,
BENGALURU - 560 004.
Ph.: 080-41570072, Fax: 080-41699599

| Tax Description | | |
|--------------------|----|---------------|
| CGST | 9% | 5,400 |
| SGST | 9% | 5,400 |
| Grand Total | | 70,800 |

Rupees Seventy thousand and Eight hundred only

| | | | |
|--|--|---|--|
| Payment Terms | | Monthly billing | |
| GSTIN No. | | 29AMJPM5495J1Z9 | |
| PAN No. | | AMJPM5495J | |
| <div>For SJB Institute of Technology</div> <div>25.6.2022</div> <div>Principal</div> | | Bank Account Details | |
| | | Beneficiary | |
| | | ENVIRON INDIA | |
| | | Name of the Bank | |
| | | CANARA BANK | |
| | | A/C No. | |
| | | 04751010000117 | |
| | | IFSC Code | |
| | | CNRB0010475 | |
| | | MICR Code | |
| | | 560015326 | |
| | | Address | |
| | | Vijaya College campus, R V ROAD, BASVANGUDI BANGALORE-560004 | |

FOR ENVIRON INDIA

Authorized Signatory



Principal
SJB Institute of Technology
BGS Health & Education City
No. 67, Uttarahalli Road, Kengeri
Bangalore South - 560 060

New STP Amc service charged month of May

Sub
15 June
11/06/2022

TEST REPORT

Name & Address of the Customer

: M/s. SJB Institute Of Technology,
No.67, Uttarahalli Main Road, Kengeri,
BGS Health & Education City,
Bengaluru - 560060

Date of Sample Collection

: 12/05/2022

Particulars of sample

: STP Treated Water

Sample Qty: 2 Liters, Sampling Type: Grab,
Sampling Point: STP Treated Water Tank

Date of sample Receipt

: 12/05/2022

Sample ID/ Code

: NALRC/2022/05/WW/200

Date of Analysis Started

: 12/05/2022

Date of Completion

: 18/05/2022

Report No

: NALRC/2022/05/348

Report Date

: 18/05/2022

Page No

: 1/2

Description: - Colorless liquid having unobjectionable odor.

| SI No | Parameters | Unit | Result | Standards as per KSPCB | Test Method |
|-------|---|------|--------|------------------------|------------------------------|
| 1 | pH Value @ 25°C | --- | 7.8 | 6.5-8.5 | IS 3025(P-11) 2022 |
| 2 | Total Suspended Solids | mg/L | 6.0 | <10 | IS 3025(P-17) 1984 (RA-2017) |
| 3 | Bio-Chemical Oxygen Demand (5days @ 20°C) | mg/L | 4.2 | <10 | APHA 23rd Edition 5210 BOD B |
| 4 | Chemical Oxygen Demand | mg/L | 18.0 | <50 | IS 3025(P-58) 2006 (RA-2017) |
| 5 | Ammonical Nitrogen as N | mg/L | 1.7 | <5 | IS 3025(P-34) 1988 (RA-2019) |
| 6 | Total Nitrogen as N | mg/L | 4.3 | <10 | IS 3025(P-34) 1988 (RA-2019) |

*****End of the report*****



[Signature]
Principal

SJB Institute of Technology
BGS Health & Education City
No. 67, Uttarahalli Road, Kengeri
Bangalore South - 560 060

[Signature]
Analyzed By

[Signature]
Authorized-Signatory

Note 1. The results listed above pertain only to the tested samples and applicable parameters. 2. Samples will be destroyed after 15 days from the date of issue of test report unless otherwise specified. 3. This report is not to be reproduced either wholly or in part and can not be used as evidence in the court of law and should not be used in an advertising media without prior written permission. 4. Laboratory is not responsible for the authenticity of photocopied test reports. 5. Sampling not done by us, unless specified

NALRC/FF/61/A

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Bengaluru - 560060

Date of Sample Collection
Particulars of sample

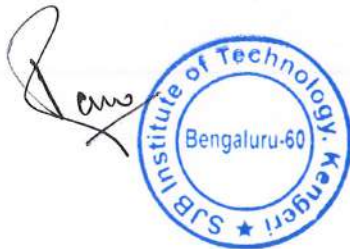
: 12/05/2022
: STP Treated Water
Sample Qty: 500ml, Sampling Type: Grab,
Sampling Point: STP Treated Water Tank

Date of sample Receipt
Sample ID/ Code
Date of Analysis Started
Date of Completion
Report No
Report Date
Page No
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: 12/05/2022
: NALRC/2022/05/WW/200
: 12/05/2022
: 18/05/2022
: NALRC/2022/05/348
: 18/05/2022
: 2/2

| Sl No | Parameters | Unit | Result | Standards as per KSPCB | Test Method |
|-------|-----------------|-----------|--------|------------------------|-------------------------------|
| 1 | Faecal Coliform | MPN/100ml | 25.0 | <100 | APHA 23 rd Edition |

*****End of the report*****



[Signature]
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BGS Health & Education City
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: 12/05/2022
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*****End of the report*****



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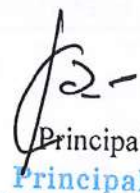
(A Constituent of BGS & SJB Group of Institutions and Hospitals)

BGS Health & Education City, Dr. Vishnuvardhan Road, Kengeri, Bengaluru-560060



Waste management and environment improvement measures to ensure a sustainable Green Campus.

| Sl.no | Environment improvement parameters | Quantity treated | Purpose |
|-------|------------------------------------|-------------------------------------|---|
| 1 | Waste water treatment plant | 550MLD | Reused for maintaining Greeneries |
| 2 | Compost from withered leaves | 9.5cubic.meters /six months | Used for Gardening purpose |
| 3 | Food waste | 230kg/day | Some amount is used for bio-digestion & remaining goes to Piggeries, |
| 4 | Total number of trees | 360 trees of 20 varieties of spices | 70,0840 pounds of Oxygen produced &32,0850 pounds of carbon dioxide obsorbed. |


Principal

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Kengeri, Bengaluru - 560 060.

Waste Management Report

(Extraction from Green Audit report)

VANALOK

environmental sustainability

4th Floor, Vanavikas, 18th Cross Malleshwaram,
Bengaluru-560003, vanalok@gmail.com
+91 9591100551 / 9449285226

1st September 2022

CERTIFICATE

This is to certify that SJB Institute of Technology Bangalore has conducted detailed Environmental Green Audit of their campus and has submitted necessary data and credentials for scrutiny. The activities and measures carried out by the college have been verified based on the report submitted and was found to be satisfactory. The efforts taken by the faculty and students towards environment and sustainability is highly appreciated and commendable.

Director



Vanishalok

Vanalok Private Ltd

Green Audit conducted By

Anisha

Anisha Udaykumar

21 / IN / 1022348 / 6032

Dr.
Principal

SJB Institute of Technology
67, BGS Health & Education City,
Dr. Vishnuvardhan Road,
Kengeri, Bengaluru - 560 060.



Vanalok Pvt Ltd is an eco-enterprise registered at Bengaluru

4.3 Waste Management:

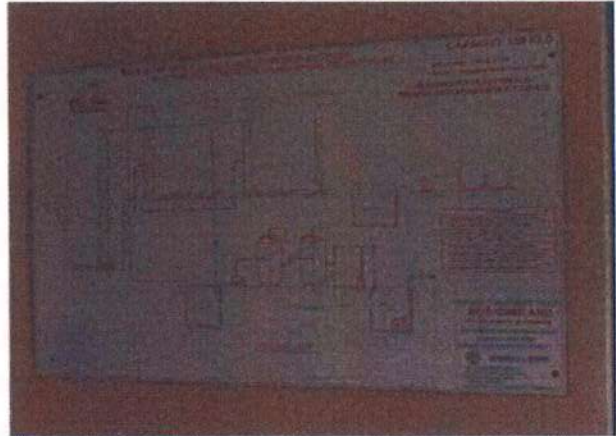
Solid waste can be categorized into three types namely: Biodegradable, Non-Biodegradable and Hazardous Waste. In an institutional setting, the only hazardous waste generated is E-waste and Sanitary Waste. Biodegradable or Wet waste is mainly leftover food components, canteen waste etc., while non-biodegradable includes recyclable waste like plastics, tin, bottles, papers etc. E-waste majorly contains harmful chemicals and metals that could cause harm to the handlers or even cause harmful gas emissions in case it is burnt in landfills. Such waste needs to be collected and given special treatment. Thus, minimization of solid waste is an essential win on the road to sustainability. This indicator addresses the waste collection and disposal mechanisms.

Observations:

The total waste collected on the campus is around 73 tons of wet waste and 7.3 tons of dry waste for the year 2020-21. Waste segregation seems to be taking place at the source itself. There were provisions for dustbins with clear demarcations for wet waste and dry waste in every place possible. All the segregated waste are sent to the respective vendors. Wet waste is sent to piggeries, dry waste to recycling units and E-Waste to the respective authorized vendors who would safely dispose of the waste components after extraction of required materials. The institution encourages extensive usage of E-communication thereby moving towards a paperless mode of communication.

The college has a fully functional STP (Sewage Treatment Plant) with a capacity of recycling up to 550 KLD in place that takes care of all the grey water recycling. It runs for 18 hours in a day. The water first passes through a collection tank with a bucket screen that screens solid waste initially. Following which the water is moved to an equalizer tank and then to an anaerobic digester used for treatment of wastewater. After the digestion of waste using microbes, the water is moved to an aeration tank that provides a constant supply of oxygen to allow the microorganisms to digest the organic waste. The water is then moved to a clarifier tank to allow the sludge to settle at the bottom. The recycled water is sent to filtration units to further process the water and then finally sent to the

collection tank. The recycled water is then utilized for gardening purposes. A thorough STP plant is necessary as the lab waste and other sewage needs to be thoroughly treated. The presence of this impeccable recycling option in the campus definitely shows that the opportunities for water utilization is fully explored.



Recommendations:

1. Having proper sanitary waste disposal mechanisms on site like an incinerator for safe disposal are a part of good environmental practices. Having sanitary pad vending machines could also benefit the students on campus.
2. Applying concepts of Reduce, Reuse, Recycle and Refurbish wherever possible could instil a green mentality in the campus.
3. Installing proper composting units in the form of pits to take care of wet waste in the premises itself could be beneficial to the institution. This could be done involving students and the compost could be used as nourishment for the trees and plants on the campus.
4. Training and campaigns in cotton bag making for students and staff will reduce the usage of throw away plastic carry bags.
5. Leaf litter from the campus can be effectively used for aerobic/vermicomposting so that the composted material can also be used as good manure.

5. Summary:

An audit of natural resources is an important tool for ensuring that natural resources are being used in an eco-friendly and sustainable manner. Green auditing is the process of determining whether institutional practices are environmentally friendly and sustainable. It is a continuous process of identification, monitoring and discussion. There is scope for further improvement, particularly concerning waste, energy and water management. The college in recent years consider the environmental impacts of most of its actions and makes a concerted effort to act in an environmentally responsible manner. Even though the college does perform fairly well, the recommendations in this report highlight many ways in which the college can work to improve its actions and become a more sustainable institution.

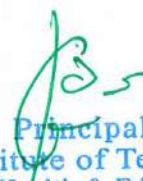


Figure 1: Good Environmental Practices for Sustainable Development.

6. Corollary:

From the green audit, the following conclusions can be made:

- ❖ Water management consists majorly of the rainwater harvesting systems that bring in a good amount of water that could be used during difficult times. More thought could be put into rainwater recharge pits that could replenish the ground water table.
- ❖ Food waste or wet waste, in general, can be turned into compost that can be used as enrichment for the green on the campus. This would help them institution lessen its dependence on the local authorities for disposal.
- ❖ E-waste is segregated, handled and disposed of properly in an eco-friendly and responsible manner.
- ❖ Reduction in the use of one-time-use plastics like bottles, cups, folders, pens and other decorations could help reduce the plastic waste menace on the campus.
- ❖ Wear masks signage were seen on the campus.


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