Shri Guru Buddhiswami Shikshan Prasarak Sanstha's

Shri Guru Buddhiswami Mahavidyalaya

Purna (Jn.), Dist. Parbhani (M.S.)

Affiliated to

SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY, NANDED.

Estd: 1983

Awarded The Best College (Rural) by S.R.T.M. University, Nanded

GREEN AUDIT

Audited by: Paramwishwa Foundation, Nanded (NGO)

2023

SHRI GURU BUDDHISWAMI SHIKSHAN PRASARAK SANSTHA'S

SHRI GURU BUDDHISWAMI MAHAVIDYALAYA, PURNA (Jn.)

Pin-431 511, Dist. Parbhani (M.S.) India.

GREEN AUDIT

[Global Readiness in Ensuring Ecological Neutrality Audit]

Introduction

Educational institutions have sweeping effect on the world around them, both negative and positive. They are in a unique position as educational institutions to be leaders in pursuing environmentally sustainable solution. The SGBMP, hence, has made an attempt to analyse the environmental practices being followed within and outside the College campus for an eco-friendly ambience. The College Campus is spread over more than three and half acres and all the hells get ample sunlight and air. It has taken a number of positive steps to reduce adverse impact on campus environment.

Environmental impact can be studied based on four significant indicators:

1. Energy Resource Management
2. Water Resources Management
3. Tree Plantation (Air Quality Management)
4. Waste Management (Solid & Liquid)

GREEN Audit has been carried out on four indicators, covering an extremely wide range of environmental impacts. We examine the performance of the College on each of these indicators, and offer recommendations about how the College can reduce its environmental impact within each indicator. We hope that this report will provide an accurate snapshot of Shri Guru Buddhiswami Mahavidyalaya's efforts to study environmental impact on the campus, and that it will aid the College in prioritizing positive steps, it can take to improve overall sustainability. We intend this document to be revisited periodically and updated, at regular intervals. The Department of Botany and Microbiology have helped in preparing a factual report.

01. Energy Resource Management

Energy management, is the proactive and systematic monitoring, control and optimization of College's energy consumption to conserve use and decrease energy costs. It includes actions such as maintaining monthly energy bills upgrading to energy saving bulbs etc.

A) Energy Conservation:

Goal: - To encourage efficient energy use and promotion.

Benchmark: Total consumption of energy for the College Office, Laboratories, Classrooms, Library and Playground etc.

Performance: The energy consumption is in the economic level because of the use of modern LED Lamps and Fittings.

As per the policy of the Management about using alternative energy resources, three solar street lights have been set up, one near administrative wing and the other two near the Garden.

Energy Use: The college has employed, from the last couple of years, several measures to save energy including:

- Awareness programmes conducted for the students and staff on energy conservation
  - The use of LED lamps in the college office, class rooms, laboratories, verandahs, etc.
  - Computers and other equipment's are put on power-saving mode.
  - Electricity wastage is controlled through central double switch system one at Main Panel Board and others are in the passages near classrooms & laboratories so the lights and fans can be switched off timely.
- Submersible Pump sets (02 motors, 0.75 hp) are used for water pumping. These measures have helped to reduce the overall energy consumption on campus.
- The Management has installed three separate meters for three separate wings to reduce load on single meter and avoid high rates slab.

Details of the Electrical fixtures on the campus:

Sr.	Location	Projector	LED	TV	Tube set	Ceiling Fan	Computers/ Laptop	Printers	Inverters
1.	A-wing Ground Floor	--	30	01	23	29	13	07	02
2.	A-wing First Floor	--	07	01	10	16	04	01	--
3.	B-wing Ground Floor	03	02	--	39	32	09	04	01
4.	B-wing First Floor	04	02	--	20	33	34	05	03
5.	B-wing Second Floor	01	--	--	06	19	06	02	--
6.	C-wing Ground Floor	--	09	--	20	42	02	01	01
7.	H-wing Ground floor	--	--	--	12	11	06	02	--
8.	H-wing First Floor	--	04	--	10	10	02	02	--
	Total	**08**	**54**	**02**	**140**	**192**	**76**	**24**	**07**

9. Submersible motors: 02
10. Xerox machines: 04
11. Freeze: 03
12. Exhaust fans: 04
13. 50W street lamps: 05
14. 50W Solar lamps: 04

The College building is an eco-friendly one, having proper windows / ventilators, large porches, passages for allowing ample sunlight and air circulation. Hence, we require less electricity light in the class-rooms.

B) Renewable Energy Sources:

Goal: Encourage purchasing and/or production of renewable energy.

Benchmark:

A percentage of energy produced from renewable sources i.e. solar power.

Future plans for setting and attaining a higher percentage.

Performance:

Adoption of solar energy resources under renewable energy, is the best course of action in the existing circumstances. Solar technologies are broadly characterized as passive or active solar technologies depending on the way these equipment's capture, convert and distribute solar energy. Active solar techniques include the use of photovoltaic panels and solar thermal collectors to harness the energy. Passive solar techniques include orienting a building to the Sun, selecting materials with favourable thermal mass or light dispersing properties, and designing spaces that naturally circulate air. Solar energy is one of the sources for lights, fans, heaters used in the College.

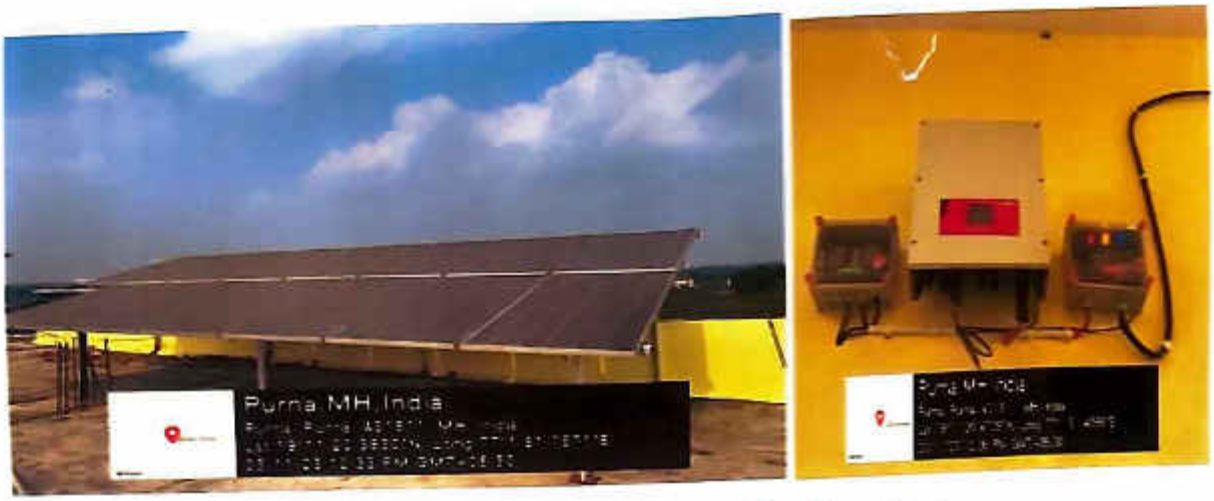
Minimal consumption of energy is itself, the energy conservation. College has planned to use non-conventional sources of energy in the campus to save the use of conventional sources i.e. reduction in electricity. It also gives the imperative message of how the non-conventional sources of energy are useful to the society by using Solar Power Lamps on the campus. Presently there are four Solar lamps, placed on the campus: first is placed at the entrance of the College, which almost covers the front side of the college and most of the play-ground area, second is placed near the office building (A-Wing), the third one covers the assembly area and the fourth Solar light is placed to cover the area of motor-cycle stand.

As per last year suggestions, the College avoids wastage of energy and have started to use renewable energy. Recently it has installed a 5KW Solar Panels Plant connected to 10 KW Inverter to fulfil almost all the electricity requirements. Use of renewable energy will gradually increase in the days to come.

Recommendations:

- Use of renewable energy for total campus.
- Solar motor pump must be used for garden irrigation
- Increase saves energy practices in campus

SGBMP Energy Resources:



5kw Solar Plant connected to 10 kw inverter

Solar Lamps (total 04) on the Campus

2. Water Resource Management

Goal: Efficient Water Usage and Water Conservation/ Rainwater Harvesting.

Benchmark: Water use should not exceed 8 to 10 litter per day per person on campus.

Performance:

The most important part of the rain (roof) water harvesting is the storage system. The storage system is designed according to the amount of water that is to be stored. The design and site (location) of the storage or the recharge system should be properly chosen. The areas which receive the rainfall frequently, there a simple storage system could be constructed, to meet the daily water requirements. Otherwise, the areas which receive the lesser rainfall, there the storage systems are quite essential.

Rainwater harvesting first of all increases water security. It is the perfect solution to meet water requirements especially in the areas which do not have sufficient water resources. It helps in improving the quality of the ground water and increasing the level of the ground water. It reduces the loss of top layer of the soil. If we capture the water directly, we need not to depend much on the water storage dams. It is the good solution to the increasing water crises. The use of water in campus is within the 8 to10 lit per day per person. There is no formal system for providing feedback to campus users.

The institution has enacted the projects of Roof-top Rain Water Harvesting. The project of rooftop rainwater harvesting is in operation. It is setup in the campus near the borewell, beside the administrative building (A-wing). Rain water which precipitates on roof is collected through pipes and filtered it in Borewell & pits. The size of the pit is 4x4x4 feet for filtration we have used sand particles, small brick bats, coarse sand, coal etc. with two layers each. Rooftop Rain Water Harvesting is observed beneficial to conserve the wastage of water and it also recharge bore water (ground water level) & reduces saltiness, TDS- Total Dissolved Solids, in water which is necessary for drinking water. This practice is model for the society. The water is used on the campus, in laboratories, urinals, lavatories and frequently for gardening.

Total requirement of water per day on the campus is given below:

Requirement of water	In litre
Consumption of water /year for drinking	345000
Consumption of water /year for sanitation	2299500
Consumption of water / Year for gardening	5761600
Total consumption / Year	8316600

No of water tanks (Synthetic):

03 tanks of 2000 litres each on the roof of B-wing;

01 Tank of 1500 litres on roof of H-wing

01 Tank of 1500 litres on roof of Women Toilet.

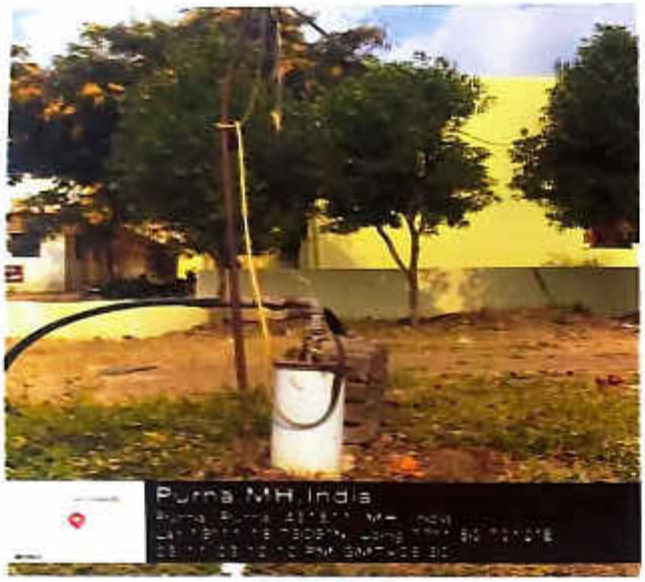
Total Storage Capacity: 9000 litres per day.

As per last year's suggestions, the College reuses waste water for wall-side flora. Water budget has been made for effective water use. Also the system for storage, supply and use of water, is improved on the campus. Rainwater harvesting system is modified to increase ground water recharge.

Recommendations:

- Increase water use efficiency.
- Maintain water storage, supply and use system.
- Use micro irrigation in campus.

SGBMP Water Resources

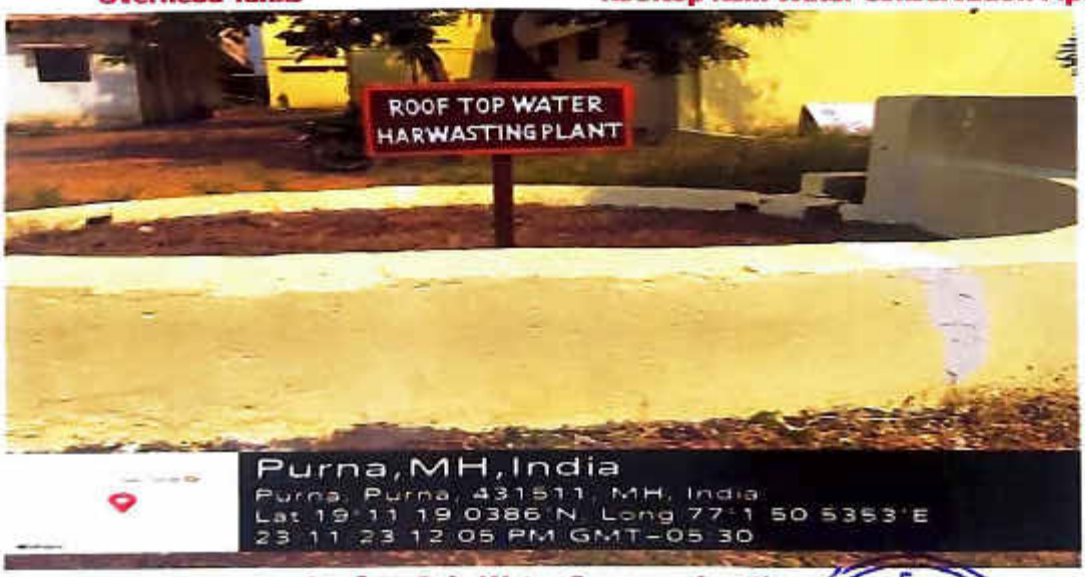


Borewell -1

Borewell -1

Overhead Tanks

Rooftop Rain Water Conservation Pipeline



Rooftop Rain Water Conservation Pit

3. Tree Plantation

(For Air Quality Management)

Goal: Ensure the quality of the Campus environment, to promote preservation and restoration of natural areas, to educate students about the process and the importance of these activities.

Benchmark:

- Select plants with low maintenance requirements and that otherwise fit the local ecosystem (i.e. non-invasive and provide habitat for native species).
- Policies ensure that development minimizes the use of impermeable surfaces such as parking spaces and landscaping in order to reduce impacts on storm water quantity and quality.

Performance:

Tree plantation means sapling and planting trees. The purpose of tree plantation is to save the endangered environment and to beautify campus environment also our life. Trees are valuable gifts of nature. They are known as the best friends of human beings. They benefit us in various ways. The lives of men and other animals and insects are inconceivable without the existence of trees in the world.

Trees absorb carbon dioxide and give us oxygen without which no living being can live. Trees give us shade, medicine, food, fruits, furniture, fuel etc. Trees also keep the weather cool and cause rainfall. They also bind soil and thus prevent erosion. Trees are part and parcel of our life. So, it is our duty to plant more trees and takes care of them in order to maintain balance between man and nature. To make the country economically developed and to save the globe from greenhouse effect, we should plant trees on a large scale.

A campus is beautifully designed with landscape, gardening at the entrance of the college. The entrance space is skilfully covered with lawn and collection of flowering plants and herbs, and some tree plants are also cultivated in the campus. Our plan is to cover the spaces with more trees in near future.

We are very fortunate because we have enough space to cultivate more trees in college campus.

Some Basic Attributes of the Shri Guru Buddhiswami Mahavidyalaya, Purna(Jn.) Dist. Parbhani Campus:

The Campus is located on newly developed Nanded – Pune Highway at Purna(Jn.), Tq. Purna, Dist. Parbhani (Maharashtra).

Miyawaki Oxygen Park

Discussion about Miyawaki Plantation with Dr. Parmeshwar Paul, Paramwishwa Foundation, Nanded (02 years before)

Planation in Miyawaki Oxygen Park on a regular basis

Miyawaki Oxygen Park (two years completed)

Distribution of campus land area:

Description of area for particulars	Area occupied for particulars in meters (in%)
Land area available for the College campus	13900.0 Sq. M.
Total Building Space covered on campus	2134.71 Sq. M.
Total area under roads	1422.0Sq.M.
Total Play Ground	4815.18 Sq. M.
Total area earmarked for Plantation	3545.0 Sq. M.
Total are under actual plantation (Miyawaki, Medicinal Garden, College Garden, Rose Garden, Roadside Plantation, Plantation in Parking, College Boundary side Plantation, Plantation around Playground, etc)	4645.0 Sq. M

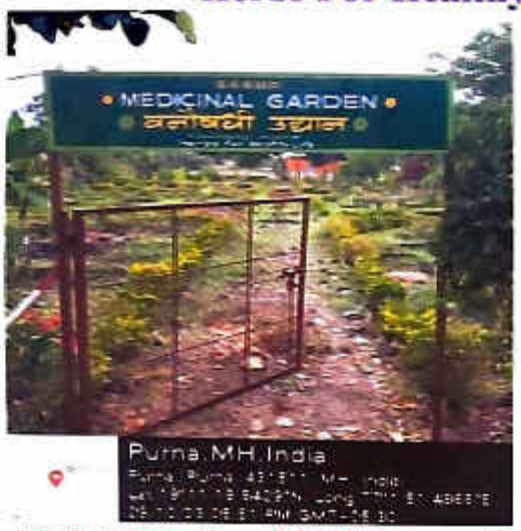
Area under green coverage is **4645.0 Square meters** in campus; it is **33.41 %** of whole campus area. The College has developed the **Medicinal Garden, Miyawaki Oxygen Park, Rose Garden**, along with regular College Garden. This green cover is sufficient to keep campus environment healthy. As per last year suggestions, the College has done plantation in the parking area, along the road sides, along the boundary of the campus, along the boundary of the playground, etc.

Recommendations:

- The green cover should be conserved.
- Maintain biodiversity of campus.
- Maintain lawn area.

Medicinal Garden

Herbs For Healthy Life (Best Practice)



Medicinal Garden of SGBMP prepared under Herbs for Healthy Life

Medicinal Plant: *Cymbopogon citratus*

Medicinal Plant: *Emblica officinalis*

Medicinal Plant: *Vitex negundo*

Medicinal Plant: *Carissa carandas*

Medicinal Plant: *Adhatoda vasica*

Tree Plantation in SGBMP

Rose Garden

4. Waste Management
(Solid and Liquid)

Goal: Minimize the impacts of solid waste use by improving the environmental characteristics and by lowering total use.

Benchmark:

- There should be in place a policy for the handling and disposal of solid waste and hazardous materials.
- Determine the solid waste management infrastructure in campus.

Performance:

Nearly everything humans do leaves behind some kind of waste. Shri Guru Buddhiswami Mahavidyalaya, Purna (Jn.), Dist. Parbhani also generates a variety of wastes, from municipal solid wastes, to electronic wastes, institutional waste to landscape wastes. The College does a good job of ensuring that hazardous materials are disposed of properly, and over the years has increased its use of environmental friendly. So, the college has given its top priority to dispose of the waste material in scientific manner. Chemical and biological waste generated from chemistry and biological departments is separately sorted and the biological waste is dumped in pit, whereas chemical waste is disposed of separately to avoid health hazards. Some small amounts of chemicals can escape down the sink when glassware is cleaned, but not much. All chemicals are labelled with handling and disposal instructions to insure proper use and disposal in the labs. The institute is a degree college The amount of chemicals used in the labs is minimum which reduces chances of incident, injury, spills, and reduces the amount of chemicals that must be cleaned up and disposed of. This is the one of the institutes in this region, where solid waste material is never burnt; instead it is collected and sorted the biodegradable material from the non-degradable (The production of non- degradable material is very negligible because we educate the students not to use plastic bags, carry bags at least in the campus, result the production is negligible) Three pits are constructed to use alternatively at the south side of the campus. The size of pits are 8 x9 x3 feet's which is standard size designed on the basis of production of solid waste material in campus. The material is dumped in the pit which is specially designed for decomposition. It is properly treated (i.e. microbial culture, moisture and air maintained) and decomposed and is used as manure for gardening. Many a times students use to bring their Tiffin's at college. Each one the waste food materials are sincerely dumping in the pits. The pits are always covered with net which restrict the production of insects and mosquitoes.

E-Waste: E-waste can be described as consumer and business electronic equipment that is near or at the end of its useful life. E -waste makes up about 5% of all municipal solid waste worldwide but is much more hazardous than other waste because electronics contain cadmium, lead, mercury, and polychlorinated biphenyls (PCBs) that can damage human health and the environment. The e-waste management is an inevitable process due to advancement in technology. The older computers are removed and experience "stumble down" or reuse in the departments or labs. The computers that are out of commission are used for parts. and then finally the waste materials were treated as scrap and given to an outside agency "Pacific Incorporation, Nanded" who is operating e-waste properly. Solid waste is grouped into four categories. Trash, paper/cardboard, co- mingled recyclables & Yard Waste

Source: Rock County Disposal

Trash/Biodegradable	25 kg/year
Paper/Cardboard/ Biodegradable/refuges	300 kg/ year
Co-Mingled (cans, bottles & plastic) Non-Bio degradable	Strictly banned in the college campus Minute production
Yard Waste	50 g/year

As per last year suggestion student and staff are aware of waste management system. We collects and separate waste regularly. Also water is reuse for garden. We have applied paperless technique in campus to reduce paper waste. We have planted tree along the solid and liquid waste management plant.

Recommendation:

- Maintain solid and liquid waste system regularly.
- Separate chemical materials that may contain hazardous chemicals.
- Waste management is a fundamental piece of the "greening" process. Recycling and reducing are concepts and tasks that everyone can understand and participate in it.
- In order to help reduce the large amount of post-consumer food waste.

Conclusions

The College does consider the environmental impact of most of its actions and makes intensive effort to act in an environmentally responsible manner.

It does perform fairly well, on sustainability issues, the recommendations in this report highlight many ways in which the college can work to improve its actions and become a more sustainable institution. In this section, the recommendations are ranked in terms of priority.

The high priority recommendations are:

- Improve the College's monitoring and reporting of water and energy usage and provide better feedback and information to campus users. Continue working towards composting the post-consumer food waste generated in the campus.
- Continue working to collect and use for composting the amount of leaf fall and sprayed on campus.
- Communicate with computer and other hardware suppliers to find out what materials they can take back themselves.
- Proper disposal of chemical materials that may contain hazardous chemicals.
- To innovative ways of reducing, reusing and recycling all kinds of waste: solid, liquid and e-waste.

Dr. Parmeshwar Paul
President, Paramwishwa Foundation,
Nanded

President
Paramvishwa Foundation
Guruji Chowk,Nanded

Shri Guru Buddhiswami Shikshan Prasarak Sanstha's Shri Guru Buddhiswami Mahavidyalaye Purna (Jn.) Estd.1983

Foundation Reg.No. MH-298/2017 F-22612 Nanded Nanded,Tq.Dist.Nanded

Dr. Parmeshwar Paul, Chairman, Paramwishwa Foundation, Nanded (NGO) visited the College on 14.09.2022

Dr. Parmeshwar Poul with the Management of SGBMP

Dr. Parmeshwar Poul with the Principal

Discussion on Plantation in the Garden

Discussion with the staff about GREEN initiatives

Dr. Parmeshwar Paul, Chairman, Paramwishwa Foundation, Nanded (NGO) visited the College on 19.12.2022

Discussion on Waste Management 19.12.2022

Dr. Parmeshwar Poul with Dr. Sanjay Dalvi, Co-ordinator, IQAC 19.12.2022

Shri Guru Buddheshwari Shikshan Prasarak Sanstha's Purna (Jn.) • Shri Guru Buddheshwari Mahavidyalaya • Estd.1983

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Campus Energy Audit (For the Year 2022-23)

Goal: - To encourage efficient energy use and promotion.

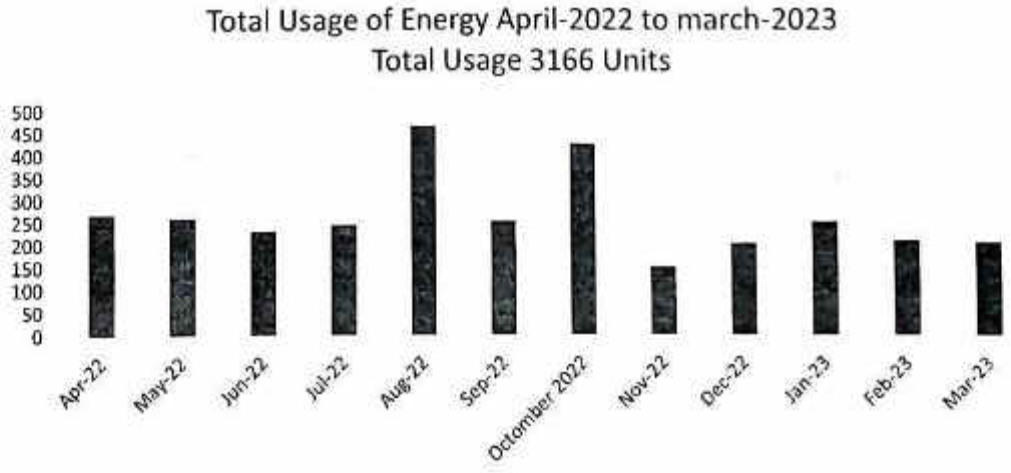
Performance: -

In this academic year, the electrical maintenance is done periodically i.e. weekly, monthly, half yearly and yearly. The old light fitting which was pipe fitting, is replaced by casing capping fitting.

Total maintenance of all ceiling fan approximately 175, is carried out so that it will consume less electrical energy. LED tubes are fitted in classroom, laboratories, library etc.

For this year the single-phase energy meter reading is shown below.

Month and Year	Units
April 2022	269
May 2022	261
June 2022	230
July 2022	244
August 2022	464
September 2022	252
October 2022	426
November 2022	150
December 2022	203
January 2023	252
February 2023	210
March 2023	205
Total usage of energy	3166 Units



Energy use diagram on Cartesian two axis method is shown below.
(Include only single-phase meter)

Shri Guru Buddhiswami Shikshan Prasarak Sanstha's Shri Guru Buddhiswami Mahavidyalaya Purna (Jn.) Estd.1983

Paramvishwa

President
Paramvishwa Foundation
Guruji Chowk,Nanded

SCAPE

SCAPE E RECYCLER
PRIVATE LIMITED

Registered Office:
Plot No. 10 B, Near Bus Stand,
Shikshak Colony, Purna, Dist. Parbhani.
Maharashtra 431511

CIN : U37100MH2021PTC365770
GSTIN : 27ABGCS6470E1Z6
Email : info@scaperecycler.com
Contact : +91 99700 62892

Ref: SER/2022-23/71

Date : 06/09/22

To,
The Principal
Shri Guru Buddhi Swami College,
Purna

Subject: Regarding channelization and collection of E-waste.

Dear Sir/Madam,

As you know, in today's world of information technology we are helpless without electrical/ electronic gadgets. With the more update and speeds, we change gadgets almost after 2 to 5 years and throw the old ones in the trash. Either they are kept in homes as trash or if damaged they are sold to scrap dealers. Do you know, what scrap dealers do with these items? They simply send these items to the informal sector where it is processed. These items are burned or treated with a chemical process for recovery which creates a hazardous impact on the health of the workers as well as the nearby area where the chemical residue is mixed with water bodies or land. This makes air, water, and lands poisonous and invites pollution, and various health problems to the lungs, kidneys, brain, bones, eyesight, etc.

As per the statement given by the Minister of State and Union Ministry o Environment, Forest and Climate Change, we produced 10,14,961 Metric Tonnes of E-waste in 2019-20. This can reach up to 18,51,337 MT by 2025. We stand third in the world for generating E-waste. Out of this generated waste, authorized recyclers could recycle up to 22% only. The remaining E-waste is still in the home as trash or it is moved to the informal sector due to a lack of awareness.

This is our approach to a bulk consumer like you as an Authorized Recycler by Maharashtra Pollution Control Board, Mumbai to create awareness about E-waste channelization and its hazardous impact on the environment and ultimately on our health. We request you to give your generated E-waste to us (As an authorized Recycler) and be a part of this channelization system to save our environment and ultimately us. Let us make our region clean and green.

To
The Executive President
Secretary
for permission.
07/09/2022

With Green Regards,

Abh...
...and Director

Shri Guru Buddhiswami Mahavidyalaya Purna (Jn.) Estd. 1983

...ving the environment by recycling waste

Shri Guru Buddhiswami Mahavidyalaya, Purna (Jn.)
Inward 881
Date 07/09/2022

MAHARASHTRA POLLUTION CONTROL BOARD

Tel: 24010706/24010437
Fax: 24023516
Website: http://mpcb.gov.in
Email: rohq@mpcb.gov.in

Kalpataru Point, 2nd and 4th floor, Opp. Cine Planet Cinema, Near Sion Circle, Sion (E), Mumbai-400022

RED/S.S.I (R15)
No:- Format1.0/RO-HQ/UAN No.MPCB-CONSENT-0000130651/CO/2204000254

Date: 06/04/2022

To,
M/s. Scape E Recycler Private Limited
Sr. No. 157/2, Plot No. 11,12,17,18,26-28, Chanakya Nagari Purna
Tal: Purna, Dist:- Parbhani.

Your Service is Our Duty

Sub: Consent to Operate under RED category.

Your application No.MPCB-CONSENT-0000130651 Dated 25.01.2022

For: grant of Consent to Operate under Section 26 of the Water (Prevention & Control of Pollution) Act, 1974 & under Section 21 of the Air (Prevention & Control of Pollution) Act, 1981 and Authorization under Rule 6 of the Hazardous & Other Wastes (Management & Transboundary Movement) Rules 2016 is considered and the consent is hereby granted subject to the following terms and conditions and as detailed in the schedule I, II, III & IV annexed to this order:

1. **The consent to operate is granted for a period up to 31/03/2027**
2. **The capital investment of the project is Rs.0.377 Crs. (As per undertaking submitted by pp)**
3. **Consent is valid for the manufacture of:**

Sr No	Product	Maximum Quantity	UOM
Products			
1	Collection, Segregation, Dismantling & Recycling of E-Waste (ITEW - 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16 CEEW- 1, 2, 3, 4, 5)	235	MT/A
2	Plastic Granules from Plastic Scrap	45	MT/A

For Product No. 1 - Using Environmentally Sound technology as per E-Waste (M) Rules, 2016 & Subject to having authorization from MPCB under Sub-Rule (3) of Rule 13 of E-Waste (Management) Rules, 2016. For Product No. 2 - Subject to having valid Registration as 'Plastic Recycler' under Rule 13 of the Plastic Waste Management Rules, 2016.

4. **Conditions under Water (P&CP), 1974 Act for discharge of effluent:**

Sr No.	Description	Permitted (in CMD)	Standards to	Disposal Path
1	Trade effluent	0	As per Schedule-I	Not Applicable
2	Domestic effluent	0.30	As per Schedule-I	Soaked in soak pit

Shri Guru Buddheshwarji Madhyamik Vidyalaya Purna Shikshan Prasarak Sanstha Estd.1983