DYP
SALOKHENAGAR

Dr. D. Y. Patil Pratishthan's College of Engineering Salokhenagar

AUDIT REPORT

- 2020 - 2021 -

ENVIRONMENTAL & CIVIL ENGINEERING SOLUTIONS
ISO 9001: 2015, IEC 17025: 2017

Dr. D. Y. Patil Pratishthan's College of Engineering
Salokhe Nagar Kolhapur

Editorial

In the Era of global warming and climate change every citizen has to reduce their own carbon footprints to tackle with the adverse impacts of climate change. A green audit of any academic institution revels ways in which we can reduce energy consumption, water use and reduction in emission of carbon dioxide in the environment. It is a process to look into and ask ourselves whether we are also contributing to the degradation of the environment and if so, in what manner and how we can minimize this contribution and bring down to zero and preserve our environment for future generation.

DYP Salokhenagar, Kolhapur administration has already taken a step towards the green approach and conducted various audit of campus in the year 2020-2021. As an outcome of this institute has taken green steps to reduce its carbon foot prints by several means in campus, solar electrical panels and green computing in the administration and examination. The responsibility of carrying out the scientific green audit was given to Environmental and Civil Engineering Solutions. The organization has followed the rules and regulation of Ministry of Environment and Forest, Govt. of India and Central Pollution Control Board, New Delhi.

A questionnaire was prepared based on the guidelines and format of CPCB, New Delhi to conduct green audit. The information related to consumption of resources like water, electricity and handling of solid and hazardous waste was collected in the formats from main building support services and departments. The data collected was grouped and was tabulated in Excel sheets and analysed. The graphs of the analysed data were prepared for getting quick idea of the status. Interpretation of the overall outcomes was made which incorporates primary and secondary data, references and interrelations within. Final report preparation was carried out using this interpretation to prepare environment management plan of institute for next two years.

Dr. D. Y. Patil Pratishthan's College of Engineering Salokhe Nagar Kolhapur

Environmental & Civil Engineering Solutions ECS Sangli.

Nikhil N. Kamble
(C.E.O and Head)

Environmental and Civil Engineering Solutions

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1. Introduction:

The modernization and industrialization are the two important outputs of twentieth century which have made human life more luxurious and comfortable. Simultaneously, they are responsible for voracious use of natural resources, exploitation of forests and wildlife, producing massive solid waste, polluting the scarce and sacred water resources and finally making our mother Earth ugly and inhospitable. Today, people are getting more familiar to the global issues like global warming, greenhouse effect, ozone depletion and climate change etc. Now, it is considered as a final call by mother Earth to walk on the path of sustainable development. The time has come to wake up, unite and combat together for sustainable environment.

Green Audit is the most efficient ecological tool to solve such environmental problems. It is a process of regular identification, quantification, documenting, reporting and monitoring of environmentally important components in a specified area. Through this process the regular environmental activities are monitored within and outside of the concerned sites which have direct and indirect impact on surroundings. Green audit can be one of the initiative for such institutes to account their energy, water resource use as well as wastewater, solid waste, E-waste, hazardous waste generation. Green Audit process can play an important role in promotion of environmental awareness and sensitization about resource use. It can create consciousness towards ecological values and ethics. Through green audit one can get direction about how to improve the condition of environment.

1.1 Need of audit:

Green auditing is the process of identifying and determining whether institutions practices are eco-friendly and sustainable. Traditionally, we are good and efficient users of natural resources. But over the period of time excess use of resources like energy, water, chemicals are become habitual for everyone especially, in common areas. Now, it is necessary to check whether our processes are consuming more than required resources? Whether we are handling waste carefully? Green audit regulates all such practices and gives an efficient way of natural resource utilization. In the era of climate change and resource depletion it is necessary to verify the processes and convert it in to green and clean one. Green audit provides an approach for it. It also increases overall consciousness among the people working in institution towards an environment.

1.2 **Goals of audit:**

Institute has to conduct an audit with specific goals as:

1. Identification and documentation of green practices followed by university.
2. Identify strength and weakness in green practices.
3. Conduct a survey to know the ground reality about green practices.
4. Analyse and suggest solution for problems identified from survey.
5. Assess facility of different types of waste management.
6. Increase environmental awareness throughout campus.
7. Identify and assess environmental risk.

1.3 **Objectives of Audit:**

1. To examine the current practices which can impact on environment such as of resource utilization, waste management etc.
2. To identify and analyse significant environmental issues.
3. Setup goal, vision and mission for Green practices in campus.
4. Establish and implement Environmental Management in various departments.
5. Continuous assessment for betterment in performance in green practices and its evaluation.

1.4 **NAAC criteria VII Environmental Consciousness:**

National Assessment and Accreditation Council (NAAC) which is a self-governing organization that declares the institutions as Grade according to the scores assigned at the time of accreditation of the institution. Green Audit has become mandatory procedure for educational institutes under Criterion VII of NAAC. The intention of green audit is to upgrade the environmental condition inside and around the institution. It is performed by considering environmental parameters like water and wastewater accounting, energy conservation, waste management, air, noise monitoring etc. for making the institution more eco-friendly.

1.5 **COVID-19**

Coronavirus disease 2019 (COVID-19) is a contagious disease caused by the virus SARS-CoV-2. The first known case was identified in Wuhan, China, in December 2019. The disease quickly spread worldwide, resulting in the COVID-19 pandemic.

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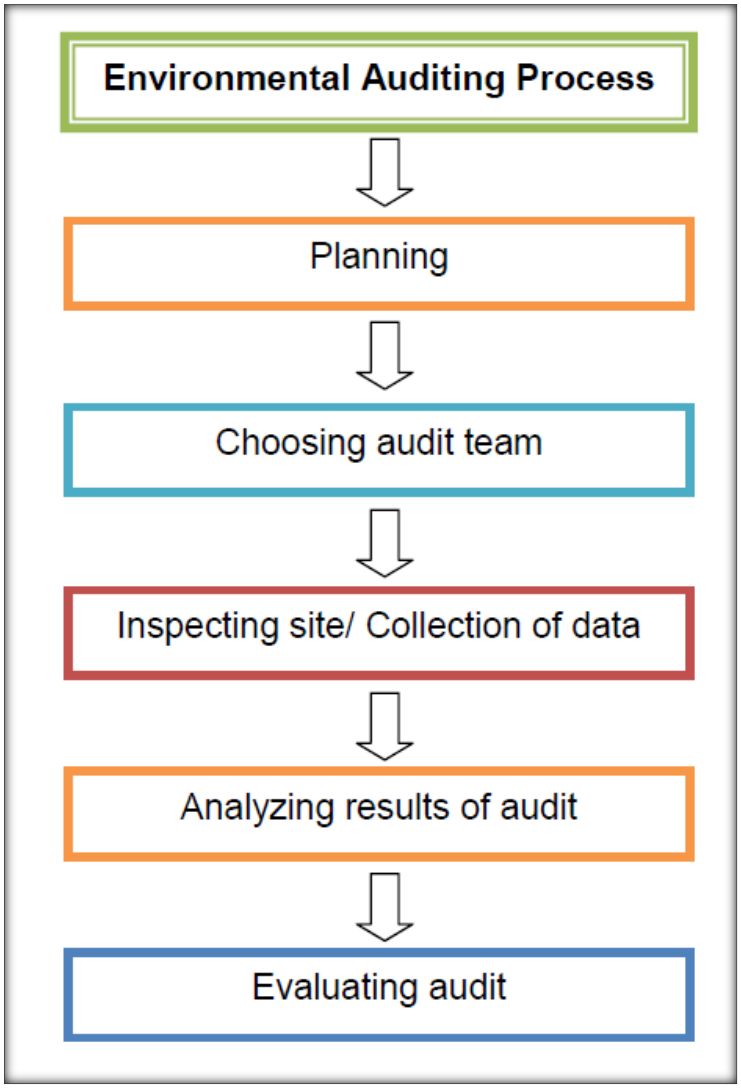
2. Overview of Institute:

The DR. D. Y. Patil Pratishthan's College of Engineering Salokhenagar, Kolhapur was established in the year of 2014. Institute has huge area of 3.41 acres and has been serving the mankind in the field of Engineering. The college is situated in Kolhapur city.

The vision of institute is to strive and become centre of excellence in under graduate engineering education. They follow a simple but effective 4M policy viz. M1 – To nurture a culture of excellence in teaching & learning with active involvement of stakeholders. M2 – To provide quality technical education with focus on fundamentals and hence become a preferred educational institute in this region. M3 – To encourage students participation in academics, co-curricular and extracurricular activities for their overall personality development and they emerge as innovators, leaders and entrepreneurs and M4 – To promote sustainable practices with ethical values. DYP is committed to providing quality technical education, research and development work to serve the multifarious needs of Industries which include business, Service Sector, and the society. The institution offers the following UG Engineering Programmes viz, B.Tech in Computer Science, Data Science, Electrical and Civil Engineering. Sustained Efforts are on to provide excellent quality technical education and realistic Engineering knowledge for overall growth of the students. One of the key areas of DYP emphasis on Sustainability and Green Technology. They have implemented RWH, Renewable energy, waste management and Energy saving concepts.

3. Methodology:



3.1 **Audits to be carried out:**

- Environmental audit
  - Water audit
  - Wastewater audit
  - Solid waste audit
- Energy audit
- Green audit

4. Environmental Audit

An environmental audit is a type of evaluation intended to identify environmental compliance and management system implementation gaps, along with related corrective actions. ISO 14001 is a voluntary international standard for environmental management systems ("EMS"). ISO 14001:2004 provides the requirements for an EMS and ISO 14004 gives general EMS guidelines. An EMS meeting the requirements of ISO 14001:2004 is a management tool enabling an organization of any size or type to:

- Identify and control the environmental impact of its activities, products or services;
- Improve its environmental performance continually, and
- Implement a systematic approach to setting environmental objectives and targets, to achieving these and to demonstrating that they have been achieved.

The audit examines the potential hazards or risks posed by the institutes. Areas examined may include environmental policies and procedures, energy use practices, recycling, waste, conservation, and pollution. Then, the institute can use the results to determine what changes need to be made for compliance. In a broad sense, environmental auditing aims to help protect the environment and minimize the risks of business activities to the environment and human safety and health.

4.1 **Water Audit and wastewater audit:**

Water auditing is a method of quantifying water flows and quality in systems, with a view to reducing water usage and often saving money on otherwise unnecessary water use. Water audit is an effective management tool for minimizing losses, optimizing various uses and thus enabling considerable conservation of water. Water audits trace water use from its point of entry into the facility/system to its discharge into the sewer/river/canal etc. Wastewater audit deals with effective management of wastewater in the system. It deals with proper generation, management, treatment, transfer and disposal of wastewater.

DYP has carried out its water and wastewater audit and has suggested many more ways for water conservation, reuse and recycle. The detail water and waste water report is mentioned below.

4.2 **Water Audit report:**

Water audit for the "DYP" was carried out. The purpose of the water audit is to provide a thorough understanding of the water uses by identifying and measuring all water using fixtures, appliances, and practices in order to recommend potential water saving efficiencies.

PRIMARY DATA

Sr. No.	Title	Information
1	**Name of Institute**	DYP, Salokhenagar
2	**Address**	Kolhapur
3	**Name of company under which water audit is carried out**	Environmental and Civil Engineering Solutions, Sangli
4	**Number of floors**	G + 3
5	**Category of building**	Educational Institute
6	**Nearest ESR location**	NA
7	**Water supply hours**	4.5 hrs. daily
8	**Water meter present**	Yes

POPULATION DETAILS

Title	Information
Fixed population (Working staff and Students)	Gents: 828
	Ladies: 345
Variable population (Visiting persons)	Gents: 15
	Ladies: 10

SOURCE INFORMATION

Title	Information
Sources of water	Deep well (Bore well) and Municipal corporation
Connection details	1" PVC pipe inlet and 2" outlet distribution pipe

STORAGE DETAILS

Title	Information
Overhead tank type	Elevated tanks
Location	On terrace
Number of tanks	**Elevated tanks:** 5500 lit PVC X 1 5000 lit PVC X 2
Motor connection details	2 Hp for pumping 2 Hp for domestic 10 Hp for wastewater pumping
Pumping period	1 hour twice a day
Underground sump	YES
Capacity of underground sump	Underground reservoir: 30,000 lit

WATER USAGE FOR FLUSHING

Toilet	Number of users	Water consumption
Gents toilet	828 users	828 X 10 lit = 8,280
Washbasin	1173 users	1173 X 0.75 lit = 880
Ladies toilet	345 users	348 X 12 lit = 4,176
Toilet cleaning	400 liters	400 liters
Floor cleaning	500 liters	500 liters
Gardening	1500 liters	1500 liters
Laboratories	3000 liters	3000 liters
Total		**18,736 liters**

WATER USED FOR DRINKING

Deep well water assessment

Sr. No.	Test	Results	Limit
1	pH	**6.3**	6.5-8.5
2	TDS	**1285**	-
3	E.C	**1954**	-
4	Hardness	**214**	200
5	Chlorides	**107**	200
6	MPN	**Ab**	1.0
7	Odor and Color	**Ab**	-

4.3 **Waste water audit:**

The campus generates huge amount of wastewater. The source for wastewater in the campus are the washrooms and urinals inside the campus. To estimate the amount of wastewater generated all the water that is used in the washrooms, is considered as wastewater.

Sr. No.	Section	Wastewater generated in litres
1	Wastewater generated in campus	**18,736**
2	75% of water is converted to wastewater.	**14,052**
Total		**14,052 lit**

4.4 **Waste water treatment plant:**

Currently institute let's all it waste water into sewers and some of the waste water is disposed at the back of main building in the Nalla. Currently there is no any waste treatment facility at institute. Sampling of waste water was done for 3 months for the parameters of COD, BOD, TKN and pH. Following table shows the characterization of wastewater.

Sr. No.	Parameter	Reading
1	pH	8.18
2	COD	128
3	BOD	112
4	TKN	28

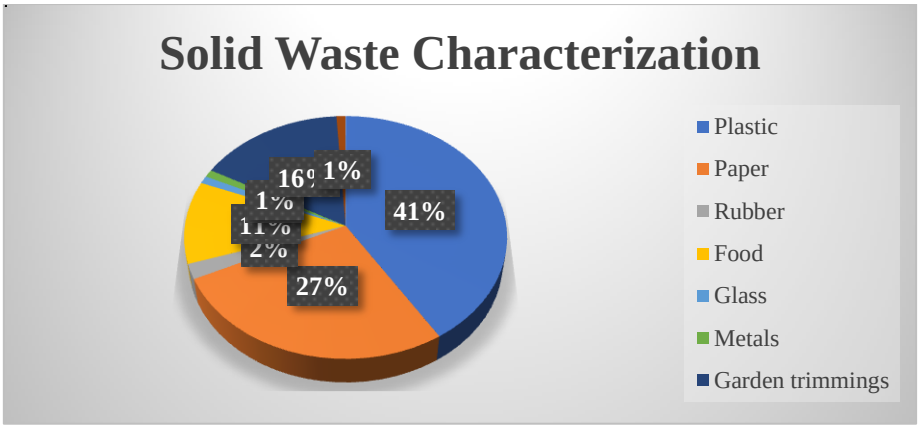
4.5 **Solid waste Audit:**

A waste audit is a physical analysis of waste composition to provide a detailed understanding of problems, identify potential opportunities, and give you a detailed analysis of your waste composition. A waste audit will help you clearly identify your waste generation to establish baseline or benchmark data, Characterize and quantify waste stream, Verify waste pathways, identify waste diversion opportunities and identify source reduction opportunities. Solid waste is the unwanted or useless solid material generated from the human activities in residential, industrial or commercial area. Solid waste management reduce or eliminates the adverse impact on the environment and human health. Solid waste audit for DYP was carried out. The entire premise was analysed for solid waste generation and waste characterization. Overall waste was observed and characterization was done. The above table shows the components of solid waste at the campus. Quartering method was used and 1 Kg of waste was selected.

Sr. No.	Section	Quantity (kg)
Ground floor		
1	Classrooms	35
2	Laboratories	85
3	Office	85
4	Library	40
5	Reading room	25

Waste was collected and segregation was done. Quartering method was used and following composition of waste was obtained.

Sr. No.	Type of waste	Composition %
1	Plastic	41
2	Paper	27
3	Rubber	1
4	Food	12
5	Glass	1
6	Metals	1
7	Garden trimmings	14
8	Cloth and fibre	3



After analysing all the bins it was observed that plastic had highest contribution viz. 41% followed by the paper waste i.e. 27%. Mostly common observed plastic items were plastic wrappers of chips, soft drinks bottles and chocolate wrappers. The paper waste included paper wrappers, notebook pages, pamphlets and some pieces of cardboard. The third highest waste included garden trimmings. It included small grass, minute branches etc. The least contribution was of cloth, fibre, glass and metals.

Institute follows good practices regarding separate bin system, and the bins are even marked. There are 2 separate bins present in campus viz. black bins for wet waste and green bins for dry waste.

4.6 **Observations and Conclusion:**

- There are separate bins for wet waste and dry waste. Hence, source segregation takes place.
- Institute has taken steps towards paper recycling. The paper waste collected from the bins is sending for recycling.
- Plastic ban in campus is implemented but due to lack of seriousness in the students plastic is used in campus. Institute should conduct plastic awareness seminars for both the staff and students.

Assessment of soil was done to determine the quality of soil:

Sr. No.	Test	Results
1	pH	**6.3**
2	NPK	**2:4:1**
3	Acidity	**138 mg/lit**
4	Hardness	**181 mg/lit**

5. Energy Audit

An energy audit is an inspection survey and an analysis of energy flows for energy conservation in a building. It may include a process or system to reduce the amount of energy input into the system without negatively affecting the output. In commercial and industrial real estate, an energy audit is the first step in identifying opportunities to reduce energy expense and carbon footprint.

A nation is tiring to advance in quantity and quality to the spread of education among the common India and development of their intelligence. In India the entire field of education and other fields of intelligent activities had been monopolized by a handful of men before independence. But today we are marching towards the desirable status of a developed nation with fast strides. But the development should be a sustained one. For achieving such an interminable development energy management is essential. As far as concerning electricity crisis, we are facing lack of electricity during office work. So, institutional management is taking design regarding production of electricity and saving electricity for Eco social aspect. Energy requirement of India is growing and incomplete domestic fossil fuel treasury. The country has motivated strategy to enlarge its renewable energy resources and policy to establish the nuclear power plants. India increases the involvement of nuclear power to largely electrical energy development facility from 4.2% to 9%. India's industrial demand accounted for 35% of electrical power requirement, domestic household use accounted for 28%, agriculture 21%, commercial 9%, and public lighting and other miscellaneous

applications accounted for the rest. Energy conservation means reduction in energy consumption without making any sacrifice of quantity or quality. A successful energy management program begins with energy conservation; it will lead to adequate rating of equipment's, using high efficiency equipment and change of habits which causes enormous wastages of energy. By observing all these study lack of electricity and huge electricity demands. It is necessary to plan to be self-sufficient in electricity requirement.

5.1 **Connection details:**

Institute receives electricity from MSEB i.e. Maharashtra State Electricity Distribution Co. Ltd. Following are the details about connection.

- **Type of connection:** LT
- **Tariff:** 71 LT-II C
- **Type:** TOD
- **Contract demand:** 188.00 KVA
- **Feeder voltage:** 11 KV

Tariff Structure:

As per Maharashtra State Electricity Distribution Company Limited, HT and LT consumers have an option to take Time of Day (TOD) tariff instead of the normal tariff. Under TOD tariff electricity consumption and maximum demand in respect of HT consumers for different periods of the day i.e. normal period, peak load period and off-peak load period could be recorded by installing TOD meter. The maximum demand and consumption recorded in different periods could be billed on the following rates of the tariff applicable.

TOD Tariffs	Rate % (Rs./Unit)
0000 Hrs- 0600 Hrs & 2200 Hrs- 2400 Hrs	-1.500
0600 Hrs- 0900 Hrs & 1200 Hrs- 1800 Hrs	0.000
0900 Hrs- 1200 Hrs	0.800
1800 Hrs- 2200 Hrs	1.100

Details of laboratory equipment are at various sections using electricity:

Department	List of Laboratory	Major electricity consuming equipment's
Civil	CT lab	Aggression Impact machine
	SOM lab	Los Angeles abrasion test machine
	FM lab	Crushing test of aggregate
	Geotechnical lab	Standard penetrometer
	Environment Lab	Ring and bell apparatus
	Transportation lab	Pensky Morton's flash point and fie point
	Surveying lab	Ductility test machine
	Applied mechanics lab	Viscosity of bitumen
		Stripping test
		Muffle furnace
		COD digester
		BOD incubator
		Oven
		Hot plate
		Loading frame
CSE	Database lab	Dell PC
	System programming	UPS
	Clod computer	Printers
	Mobile computer	
	Computer network	
	Programming 1	
	Programming 2	
Data Science	KIC	Dell PC
	Operating system	UPS
	Data science	Printers
	Python program	
Electrical	Basic electrical	SCR/DIAC/TRIAC Circuit
	Circuit lab	fully controlled converter
	Analogy electronics	Chopper circuit
	Electrical engineering	SMPS

	DC machine	101 key board
	Power electronics	RS 232 cable
	AC machines	Stepper motor
	Digital electronics	Single DC regulator
	Microcontroller	Dual trace CRO
		Function generator
		Induction motor 3Hp
		Induction motor 2Hp
		Load bank 1 phase
		On/ off temperature controller
		Potentiometer as error detector
		DC voltage regulator
		Stepper motor
		DC servo motor
		AC servo motor
First year	Language lab	PC
	Physics lab	Multi-meter
	Chemistry lab	Solder gun
	Basic electrical	Newton ring
	Physics	Half shade polar meter
	APM	Light source
		lamp
		Oven
		Furnace
		Manual beam
		Universal force table
		Bell crank lever digital
		Bell crank lever manual
		Jib crane digital

5.2 **Bill analysis:**

Bill analysis of institute had been done for academic year 2021-2022.

Sr. No.	Month	Consumption (Kw)	Cost
1	April 20	442	7436.19
2	May 20	8930	84945.68
3	June 20	2714	45176.11
4	July 20	2529	115640.80
5	August 20	2515	115292.70
6	September 20	3231	127433.60
7	October 20	3885	99414.07
8	November 20	2794	81357.29
9	December 20	3125	926532.01
10	January 21	2711	80214.25
11	February 21	3233	125424.00
12	March 21	2522	115871.77

Power Factor:

Power Factor (PF) is an indicator of efficient utilization of power. In an AC (Alternating Current) electrical power system, PF is defined as the ratio of real power flowing to the load, to the apparent power in the circuit and is a dimensionless number.

Sr. No.	Month	Power factor	Bill demand
1	April 20	1	75
2	May 20	1	75
3	June 20	1	75
4	July 20	1	75
5	August 20	1	75
6	September 20	1	75
7	October 20	1	75
8	November 20	1	75
9	December 20	1	75
10	January 21	1	75
11	February 21	1	75
12	March 21	1	75

5.3 **ILER analysis:**

Lighting is provided in industries, commercial buildings, indoor and outdoor for providing comfortable working environment. The primary objective is to provide the required lighting effect for the lowest installed load i.e. highest lighting at lowest power consumption. The purpose of performance test is to calculate the installed efficacy in terms of lux/watt/m² (existing or design) for general lighting installation. The calculated value can be compared with the norms for specific types of interior installations for assessing improvement options.

Range	Condition
0.5 or less	Urgent activity required (UAR)
0.51 - 0.70	Review Suggested (RS)
0.70- above	Good

The above tables show the range and condition of ILER after assessment.

ILER analysis for various sections in campus was carried out. Firstly using LUX meter illumination was measured and then numerical analysis was carried out. ILER gives idea about lighting conditions and measured regarding improving them.

Main Building analysis

Sr. No.	Section	LUX reading	ILER	Condition
1	Library	124	0.77	Good
2	Study room	138	0.71	Good
3	Basement	177	0.46	Good
4	Classrooms	101	0.60	RS
5	Laboratories	128	0.84	Good
6	Office	143	0.74	Good

Reasons for Good ILER:

- Proper placement of windows and doors so that natural light is available well.
- Good ventilation system.

Inverter details:

There are UPS rooms in the institute that provide constahnt backup for electricty.

Details are:

1. UPS room 1
    a. Battery: Amarom 12V-42 AH – 30 No.
    b. UPS: 40 KVH
2. UPS room 2
    a. Battery: Excide 12V-150AH – 20 No.
    b. UPS: 15 KVH

6. Green Audit and Carbon audit:

Green Audit is the most efficient ecological tool to solve such environmental problems. It is a process of regular identification, quantification, documenting, reporting and monitoring of environmentally important components in a specified area. Through this process the regular environmental activities are monitored within and outside of the concerned sites which have direct and indirect impact on surroundings. Green audit can be one of the initiative for such institutes to account their energy, water resource use as well as wastewater, solid waste, E-waste, hazardous waste generation. Green Audit process can play an important role in promotion of environmental awareness and sensitization about resource use. It can create consciousness towards ecological values and ethics. Through green audit one can get direction about how to improve the condition of environment.

Carbon is the basis of life on mother Earth. It is incorporated into the plants through photosynthesis, consumed by animal species through the food, present in the form of carbon dioxide (CO2) the atmosphere, locked into the rocks as limestone and compressed into the different fossil fuels such as coal and oil. As CO2 level in the atmosphere continue to increase, most climate designs or project that the oceans of the world and trees will keep soaking up more than half CO2 . The plants on land and in the sea, taken up carbon by over many years increased the percentage discharged during decay, and this increased carbon became locked away as fossil fuels beneath the surface of the planet.

6.1 Green Cover at DYP:

DYP has got a huge green cover and has almost 9+ species of vegetation inside the campus. The institute has 3.5 acres of campus and most of this is covered by green area. They have huge plantations and structural components are Main building, office section, incubation etc. DYP has taken huge efforts to develop its green cover. The institute has about 1.22 acres of green cover. In the vicinity of the institute there are about approximately 55 fully grown trees and more than a 185 growing plants. The above table shows some of the common tree species found.

Sr. No.	Scientific name of plant	Count
1	Tecoma fulva chicklet	13
2	Acacia	1
3	Trichilia emertica	1

4	Indian rosewood	3
5	Sapodila	1
6	Phyllanthus acidus	1
7	Michelia	1
8	Barringtonia	4
9	Pongame oiltree	10
10	Heloptelea intergrifolia	1

Carbon footprint assessment:

DYP has estimated its carbon footprint by factor methodology. Various factors were used to estimate the carbon emissions from Consumption of electricity, generation of solid waste, use of vehicles in campus, carbon emissions due to human breathing and emissions from buildings. At last they have also calculated Carbon sequesterial value i.e. carbon that is absorbed by the plants.

Sr. No.	Section	Emission
1	Emission from electricity	11255 kg CO2 eq./year.
2	Emission from solid waste	1015 kg CO2 eq. per year.
3	Emission from Vehicles	266.74 Kg CO2 eq. per year.
4	Emission from human breathing	44.00 tons of CO2 eq. per year.
5	Emission from buildings	1702.20 kg CO2 eq. per year.
6	Carbon sequesterial	2007 kg CO2 eq. per year.

Highest carbon emission was observed from human breathing i.e. 44 tons of CO2 eq. per. Year. There is no any significant mean to reduce this number as it is not controllable. The next is solid waste. The emission from solid waste comprises of 1015 Kg CO2 eq. per year. This can be significantly reduced by following simple means. Waste segregation is properly observed by the institute and they should follow the cut out plastic plans. There should be complete ban in using the plastic inside the campus. There should be minimization of food waste as it contributes highest in carbon emissions. Considering emission from electricity they can be significantly reduced by decrease in electricity use. This can be done by installing LED lights and using energy efficient equipment's such as machines with high star ratings which save more. Institute can recognize renewable energy sources and have a setup in the institute. This can lead in significant saving of electricity and reduction in carbon emissions.

Vehicles have the least emissions in DYP and it is due to the easy approached parking so that vehicles do not roam in the vicinity. All the vehicles travel hardly 350 m in the campus and

this has led to lower emissions. Still institute can follows “NO Vehicle Day” on every 2nd Saturday of each month. Institute reduces about 2.4 tons of CO2 per year by the means of plants. This could be increased by increasing in plantations. DYP can plant more trees next to chemistry section, surrounding to play ground, front of applied science department etc.

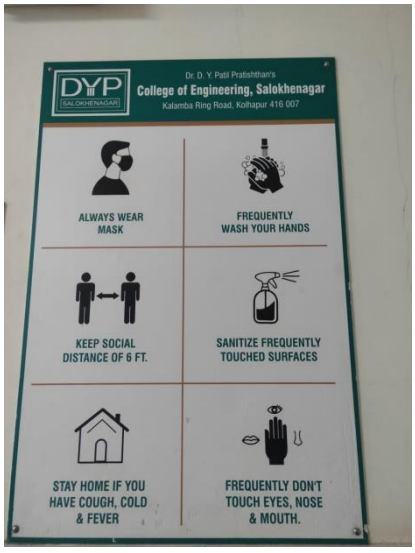
The plants having highest Carbon sequestration values are suggested. Cinnamomum verum, Eugenia caryophyllid, Bumelia celestina, Acacia Berland Eri, Acacia Francescana, Chinaberry tree, Moringa oleífer, Carya illusoriness, Pinus Arizonian and Buddleia cordata are some of the suggested species for plantation.

7. COVID 19 in DYP:

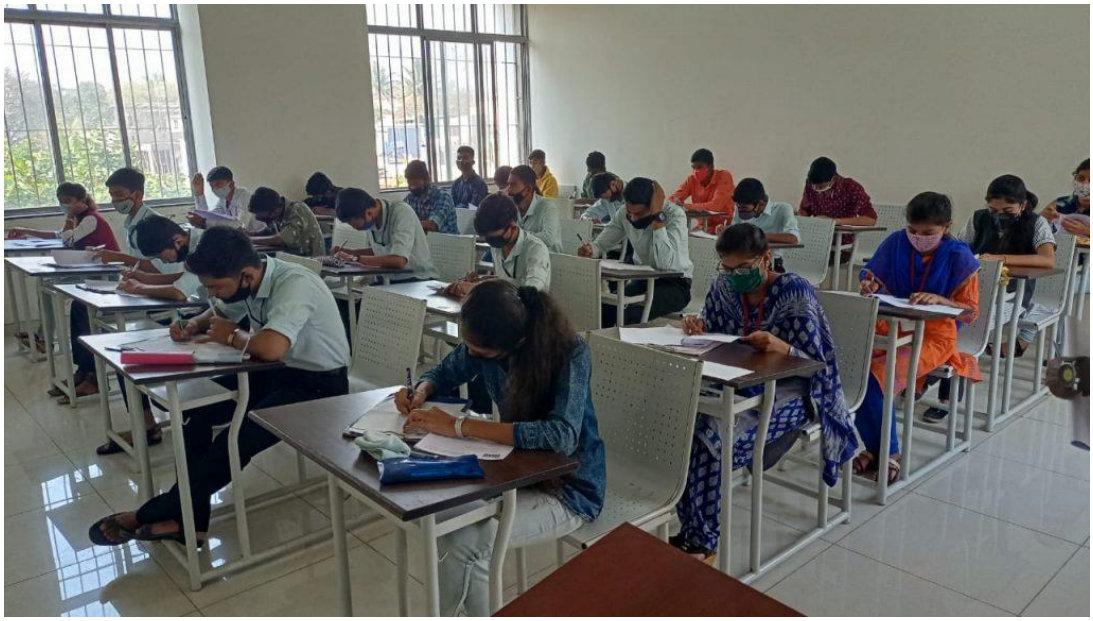
DYP has taken many preventive measured during COVID 19 pandemic era. General measures A poster of general instructions for the students is displayed at the entrance of the college, Mask must be worn in the campus, Cleanliness to be maintained, Use of hand sanitizer frequently, Must maintain social distancing, Installation of AarogyaSetu app, Prohibition of sharing books, learning material and eatables, Must maintain 6ft of distance from others.

Institute has installed contact less wash basin which is operated by foot so that there is no contact with the tap by hands.

Installation of sign boards at various location have been done for awareness of students staff and visitors.



As the institute started its working after COVID pandemic all the buses were sanitized daily. Discipline was followed by the students too by following the COVID guidelines.



8. Observations and Conclusions:

Green Audit and environmental audit is one of the important tools to check the balance of natural resources and its judicial use. Green auditing is the process of identifying and determining whether institutional practices are eco-friendly and sustainable. It is a process of regular identification, quantification, documenting, reporting and monitoring of environmentally important components in a specified area. Techniques like solar installation, application of green roof technology and planting more number of trees i.e. increasing green area inside the campus can help in reduction of footprints and also enhance greenery.

Installing more water meters at various sections the consumption can be monitored and wastages can be identified and reduced. Water conservation practices such as rain water harvesting are installed at various sections to save water as much as possible. In energy sector replacement of old equipment's, fans, machine, bulbs and high energy consuming devices with low and efficient energy consuming devices considering star rating can be done. The waste produced is not composted hence composting pits inside the campus should be developed neatly. This can happen by creating a compost pit in the institute and proper training of maintenance staff and sharing knowledge to them regarding these waste management techniques. The institute is a well-known reputed institute having good infrastructure facilities. It has a good record of laboratories and maintaining equipment's. There are fire safety measures in place and are checked and maintained well. Overall the institute has done good work in water and wastewater management by proposing Considering overall performance of the institute, there are good measures followed viz. plastic ban in campus, plastic ban etc. but the institute needs to focus on solid waste, generation of solar electricity and planting of more trees.