Gokhale Education Society's

RNC Arts, JDB Commerce and NSC Science College.

Green Audit Report 2020 - 2021

Green Audit Report.

Energy Audit Report.

Water Audit Report

Nashik Pune Road, Nashik – 422 101.

Gokhale Education Society's

RNC Arts, JDB Commerce and NSC Science College.

Green Audit Report 2020 - 2021

Green Audit was conducted by

CA. Dr. Ashis .Arun. Palkhiwale.

Green Audit, Energy Audit, Water Audit was conducted Online without Actual Physical Visit.

For 2020 - 2021.

For Green Audit the Data considered for the Period

1st June 2020 to 31st May 2021
(Academic Year)

Date of Audit / Report

26th June 2021

Nashik Pune Road, Nashik – 422 101.

Gokhale Education Society's

RNC Arts, JDB Commerce and NSC Science College.

Green Audit Report 2020 - 2021

Inclusions & Exclusions while performing the Green Audit.

1) Carbon emissions due to Students Travelling is not considered.

2) Carbon emissions due to Faculty & Staff Travelling is considered.

3) Carbon emissions during Industrial Visits travelling not considered.

4) Carbon emissions from the Construction of Building are not considered as the Building is more than 10 Years old.

5) All Wood is more than 6 years old so not considered. (Classroom Faculty Platforms). (Still Details of Wooden Furniture is mentioned)

Wood Furniture details excluding Plywood.

Wooden Chairs	Tables	Cupboards	Shelves	Desks / Benches	Partitions
56	146	115	31	207	26

6) Plywood is not considered as Plywood is already recycled.

7) Total Consumption of Electricity for the Institute is considered.

8) Total Consumption of Water for the Institute is considered.

9) LPG Cylinders are consumed mainly in Labs.

10) Green Cover is considered of the premises around the College campus which may include some part common to the Nashik Road Campus.

11) Emissions from Tiles, Cement, Bricks & Paints & Printers are not considered.

12) Ambient Air Quality Monitoring is not performed as it was an Online Remote Audit.

13)Analysis of Water entering the drains / soak pits is not performed. as it was an Online Remote Audit. (Sewage water, Lab washing water, Washing & Cleaning water) is let out in drains.

14) Raw Water Analysis is not performed as it was an Online Remote Audit..

15) Radiation due to Wifi & Mobile Phones is not considered.

Gokhale Education Society's

RNC Arts, JDB Commerce and NSC Science College.

Green Audit Report 2020 - 2021

Air.

Since it was an Online Remote Audit. Ambient Air Quality was not monitored. Ideally it should be monitored at 12 locations depending on the area of the Institute.

Since it was an Online Remote Audit. Stack Emissions of the Diesel Generator was not monitored.

Paper.

Each A 4 paper is used from both the sides.

After use on both the sides then it is sold to Old Paper Merchant.

To the extent possible use of soft copies of documents is promoted.

For the period **June 2020 to May 2021**

The consumption was 170 Reams of Paper of 70 GSM.

(500 Sheets in each Ream & each Ream of 2.18 kg)

Gokhale Education Society's

RNC Arts, JDB Commerce and NSC Science College.

Green Audit Report 2020 - 2021

Water.

Water used for

Drinking, Cleaning, Washing & Flushing, Gardening, In Laboratory.

As per the water meter installed.

Yearly reading of the Water Meter 24,00,000 Liters Per Year

So Average Monthly Water Consumption will be

24,00,000 / 12 = 2,00,000 Liters Per Month.

If the Volume of Tanks as informed by the institute is taken as base.
(Volume of water tanks certification not performed).
Two Water Tanks of 2000 Liters each and One Water Tank of 5000 Liters are filled once every day
So it indicates 9000 Liters per day approx. (always at the time of refilling the tanks the tanks may not be full empty).

So if we take working days in a Month as 25 days
2,00,000 / 25 Days in a month = 8000 Liters per day

Total Water Consumption from June 2020 to May 2021
24,00,000 Liters per 12 Months.
2,00,000 Liters per Month

So the Water Foot print is

24,00,000 / 365 Days = 6,575 Liters per Day.

So the Water Foot Print is 6,575 Liters of Water Per Day.

A separate Water Foot Print Certificate is given to the Institute.

No Rain Water Harvesting is performed.

Currently no measures are being taken to save water or to recycle water.

Gokhale Education Society's

RNC Arts, JDB Commerce and NSC Science College.

Green Audit Report 2020 - 2021

Electricity.

Total Consumption of Electricity is ideally to be considered from the Meter reading shown in the Electricity Bill.

Electricity used for

Air Conditioners, Equipments in Labs, Tube Lights, Lights & Fans. Computers & Printers. To run the Utilities.

Consumption from June 2020 to May 2021 is **24264 units.**

Monthly Average Units consumed for the Period June 2020 to May 2021 are **2022 units per month.**

Power Generation by running the Diesel Generator.

Generator Details

Quantity	Make	Power Rating	Diesel Consumed
1	Kirloskar	75 KVA	300 Liters Per Year

So Monthly Average Consumption of Diesel is
300 Liters / 12 = 25 Liters per Month.

Measures taken for Energy / Electricity Conservation.

1) Replacing the conventional Florescent Tube Lights with LED Tube Lights. (nearly 50% are replaced).
2) Replacing the CFL Blubs with LED Bulbs. (nearly 60% are replaced).
3) **Solar Power Generation**

Yearly	Monthly
4800 Units	**400 Units**

4) Periodic Maintenance of the Diesel Generator to get Optimum performance.

LPG Consumption

Liquefied Petroleum Gas.

LPG Cylinders are used in Laboratories.

June 2020 to May 2021.

College consumes on an Average 17 Cylinders of LPG per 3 Months
17 Cylinders of 14.2 Kg of LPG Gas in it per 3 Months.
So LPG consumption is 80.47 Kg of Gas per Month.
There is no other application of LPG Cylinders in the Institute.

Gokhale Education Society's

RNC Arts, JDB Commerce and NSC Science College.

Green Audit Report 2020 - 2021

Consumption of Petrol / Diesel by Staff Travelling to & fro the Institute.

According to the data given by the Institute. For the period **June 2020 to May 2021.**

Distance Travelled by staff To & Fro the Institute by 2 Wheeler per Month based on a 25 days working Month	Petrol Consumption per day by 2 Wheeler in a month by taking an average Fuel efficiency of 40 KMPL
1467.5 Km per day so 1467.5 X 25 = 36,688 Km per Month	917 Liters Per Month
So 917 Liters per Month X 12 Months = 11,004 Liters Per Year.	

Distance Travelled by staff To & Fro the Institute by 4 Wheeler per month based on a 25 days working Month	Petrol Consumption per day by 4 Wheeler in a month by taking an average Fuel efficiency of 12 KMPL
694 Km per day so 694 X 25 = 17,350 Km per Month	1446 Liters Per Month
So 1446 Liters per Month X 12 Months = 17,352 Liters Per Year.	

Distance Travelled by staff To & Fro the Institute by 4 Wheeler per month based on a 25 days working Month	Diesel Consumption per day by 4 Wheeler in a month by taking an average Fuel efficiency of 15 KMPL
526 Km per day so 526 X 25 = 13,150 Km per Month	877 Liters Per Month
So 877 Liters per Month X 12 Months = 10,524 Liters Per Year.	

So total Petrol Consumption from June 2020 to May 2021 is
11,004 + 17,352 = 28,356 Liters per Year.
(2,363 Liters per Month).

So total Diesel Consumption from June 2020 to May 2021 is
10,524 Liters per Year.
(877 Liters per Month).

Gokhale Education Society's

RNC Arts, JDB Commerce and NSC Science College.

Green Audit Report 2020 - 2021

So Following is the Calculation of the Carbon Foot Print.

Calculation of Kg of CO2 emissions

1	2 *As per ISO 14064*	3	4	5
Category	**Kg of CO2 per unit of consumption**	**Average Monthly Consumption**	**Calculation 2*3**	**Total Kg of CO2 2*3=5**
Electricity	**4.3 Kg Per Unit**	**2022 Units**	**2022 X 4.3 =**	**8,694.6**
Diesel	**2.68 per liter**	**902 Liters**	**902 X 2.68=**	**2,417.36**
Petrol	**2.31 per liter**	**2363 Liters**	**2363 X 2.31=**	**5,458.53**
LPG	**1.51 per Kg**	**80.47 Kg**	**80.47 X 1.51 =**	**121.51**
		TOTAL		**16,692**

So the Average Monthly CO2 Emissions are 16,692 Kg of CO2.

So the Average Monthly CO2 Emissions are 16,692 Kg of CO2.

A separate Carbon Foot Print Certificate is given to the Institute.

Energy Audit Report.

As per Electrical Meter reading Consumption from June 2020 to May 2021 is **24264 units.**

It is assumed that the consumption metered is after the utilization of the 4800 units generated by Solar power.

So total Consumption will be 24264 + 4800 = 29,064 Units

Power generation by Diesel Generator is negligible so not considered.

So the Energy Consumption for the period June 2020 to May 2021 is 29064 units that is 29064 / 12 = 2422 units per Month.

Gokhale Education Society's

RNC Arts, JDB Commerce and NSC Science College.

Green Audit Report 2020 - 2021

Green Cover Details.

Green cover area in the campus as a percentage of the total area is not calculated.

Total Number of Trees in and around the Campus are **80**.

During the Period June 2020 & May 2021 around **38** New Trees Planted.

Mortality Rate of the Trees planted during the period 2020 – 2021 to be monitored.

Hazardous Waste Disposal

E waste is collected & disposed off to an Authorized E waste Disposer Party. In the said period approximately 10 Kg of E Waste Generated. (Computer, Printers)

Used Batteries are given in Buy Back to the Supplier of New Batteries.

Laboratory Waste & Used Chemicals & Reagents are diluted & let out in a pit specifically prepared for Chemical waste.

Other Non Hazardous Waste Generated which is disposed

Type of Waste	Quantity Generated in a year	How Disposed off to
Tree leaves	500 Kg	Municipality Waste
Paper	20 Kg	Old Paper Merchant
Chemical empty Bottles	25 Bottles	Scrap Dealer

Gokhale Education Society's

RNC Arts, JDB Commerce and NSC Science College.

Green Audit Report 2020 - 2021

Suggestions for Green Audit / Energy / Water Audit related activities to be carried out by the Institute.

1) STP (Sewage Treatment Plant) can be installed for processing & reusing the Sewage waste water.
2) The Flushing Tanks of WC (Toilets) to be modified such that only half gets filled & thus while flushing only half of the water is used.
3) Drip irrigation can be implemented for the Trees.
4) To fit the atomizer devise to taps to save water.
5) Testing of the water in the drain as it is directly going into the Municipality Drains.
6) Motion sensors can be fitted for the Light fittings in Washrooms, Lift and Lobby where continuous usage is not there.
7) Survival rate of planted trees to be monitored.
8) Grafting of new plants in the trunk of dead trees can be done.
9) In the next Green Audit to test the Ambient Air Quality at least at 12 Locations.
10) To test the Diesel Generator Stack Emissions.
11) To verify the radiation from Wifi & Mobile phones.
12) To conduct Poster & other Innovative Environment Idea Competition among students.
13) Use of E bikes & E Vehicles can be thought by the Staff Members.

The Above Report is prepared based on the Records & Facts given by the Office bearers of Institute.

CA. Dr. Ashis .Arun. Palkhiwale.
(ACA, GDCA, Mcom, Msc (Env Sc). MA (Eco), PhD (Env), Automobile Engg, DISA, DFM, DAM, DPT, DCL & DJL)
Lead Auditor & Trainer for
ISO 9001, 14001, 45001, 20000, 22301, 22000, 27001, 50001, 14064, 14046 & SA 8000 & CG, CSR, SOX, CDM, NABH, NABL, NBA, NAAC.