GREEN AUDIT REPORT
(2019-2020)

Maratha Vidya Prasarak Samaj's

Karmaveer Shantarambapu Kondaji Wavare Arts, Science and Commerce College

Uttamnagar, CIDCO, Nashik- 422 008 (Maharashtra)

Prepared By

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Uttamnagar, CIDCO, Nashik- 422 008 (Maharashtra)

Executive Summary

Rapid industrialization and urbanization has given rise to several environmental issues which may lead to ecological crisis. Keeping this in mind it becomes essential to adopt sustainable methods in our day to day activities. K.S.K.W. College CIDCO, Nasik believes in the same and is striving to address issues related to environmental problems.

The purpose of the green audit is to see that the practises followed in the campus comply with the green policy adopted by the institution. The methodology includes preparation and filling up questionnaire, physical inspection of the campus, observation and review of the documentation, data analysis, measurements and recommendations. It works on several facets like Water conservation, tree plantation, and Waste management, Alternative energy etc .The objectives of the audit are to evaluate as to which degree the departments comply with the same.

About the College

M.V.P. Samaj's Karmaveer Shantarambapu Kondaji Wavare Arts, Science and Commerce College,Uttamnagar, CIDCO, Nashik (Maharashtra) is committed to provide higher educational opportunities to socially under-privileged and financially weaker sections of the society..

The College offers 22 UG and 09 PG courses affiliated to the Savitribai Phule Pune University, Pune. For the effective implementation of the curricula, a meticulous action plan is developed and deployed. Teaching plans are prepared and followed according to the time table. For the better teaching practices, teachers participate in workshops on Curriculum Restructuring, Training Programmes and Special Guidance on ICT based Teaching Technology. Eminent scholars are invited to enlighten the faculty as well as students. Career Oriented/ Placement Activity is conducted to orient students towards employment market. The College has established MOU's, Linkages and Collaborations with Industries, Research Bodies and other Universities for good academic prospectus. A good number of faculty members are working on Editorial Boards of various International Journals. Experienced faculty members participate in the procedure of

curriculum design & development. Some faculty members are elected /nominated on BOS and other committees of S P Pune University, Pune.

VISION

To Empower Students with Innovative Life Skills and Social Values for Global Competency.

MISSION

Upholding the motto of MVP Samaj, 'Bahujan Hitaya, Bahujan Sukhaya', i.e. welfare and happiness of the masses, the College is committed to provide higher educational opportunities to the socially under-privileged and financially weak sections of the society and create dignity of labour and importance of self-reliance.

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Objectives of the Study

The main objective of the green audit is to promote the Environment Management and Conservation in the College Campus. The purpose of the audit is to identify, quantify, describe and prioritize framework of Environment Sustainability in compliance with the applicable regulations, policies and standards. The main objectives of carrying out Green Audit are:

- To introduce and make students aware of real concerns of environment and its sustainability.
- To secure the environment and cut down the threats posed to human health by analyzing the pattern and extent of resource use on the campus.
- To establish a baseline data to assess future sustainability by avoiding the interruptions in environment that are more difficult to handle and their corrections require high cost.

To bring out a status report on environmental compliance

Methodology

The methodology includes tools such as questionnaire, physical inspection, observation and review of documentation, interviewing key person's .The study covered the following areas

Water management

Energy conservation and Alternative energy

Waste management

Green area management

*** For Water Management and Energy conservation and Alternative energy separate Water Audit and Energy Audit have been done.

Waste Generation and treatment

This indicator addresses waste production and disposal of different wastes like paper, food, plastic, biodegradable waste, glass, dust etc. and recycling. Furthermore, solid waste often includes wasted material resources that could otherwise be channelled into better service through recycling, repair and reuse. Solid waste generation and management is a burning issue. Unscientific handling of solid waste can create threats to everyone. The survey focused on volume, type and current practice of solid waste management.

Observations

The total solid waste collected in the campus is 25 kg/day. Food Waste and tree droppings is a major solid waste in the campus. The waste is segregated at source by providing separate dustbins for Bio-degradable and Non Bio-degradable waste. Segregation of chemical waste generated in laboratories is also practiced.

Single sided used papers are reused for writing and printing in all departments. Important and confidential reports/ papers are sent for recycling to authorised recycler M/s. Sainath Raddi Depot after completion of their preservation period. Complying with government rules plastic has been banned. Metal waste and wooden waste is stored and given to authorized scrap

agents for further processing. Glass bottles generated in laboratories are reused. The food waste and tree droppings is sent to vermi-compost. Compost generated is used as organic fertilizer in the garden.

Recommendations

E-Waste Generation

E-waste can be described as consumer and business electronic equipment that is near or at the end of its useful life. This makes up about 5% of all municipal solid waste worldwide but is much more hazardous than other waste because electronic components contain cadmium, lead, mercury and Polychlorinated biphenyls (PCBs) that can damage human health and the environment

a) Observations

E-waste generated in the campus is very negligible. The college has total of 128Computers&laptops and 35printers, 03-xerox machine & 08-Scanner in working condition. The cartridges of printers are refilled and reused. Administration conducts the awareness programmes regarding E-waste Management with the help of various departments. The E- waste and defective item from computer laboratory is being stored properly. The institution has decided to contact approved E-waste management and disposal facility in order to dispose E-waste in scientific manner.

Electronic waste material such as Computer, Computer Peripherals, Printer, Scanner etc. are handed over to the following organization/department, where they are reused / recycled safely .

1. MVP Engineering college, Gangapur road, Nashik
2. MVP ITI Institute, Gangapur road, Nashik
3. Dept. of Physics & Electronics

K.S.K.W. Arts, Science & Commerce College, CIDCO, Nashik Conducts “Computer Hardware Course” for science students

Recommendations

As far as possible electronics instruments from reputed companies should be purchased which have a better life span.

Land Use and Green area -

This includes the available area under construction and open space available for plantation of plants, to ensure that the buildings conform to green standards. This also helps in ensuring that the Environmental Policy is enacted, enforced and reviewed using various environmental awareness programmes.

a) Observations

College Map

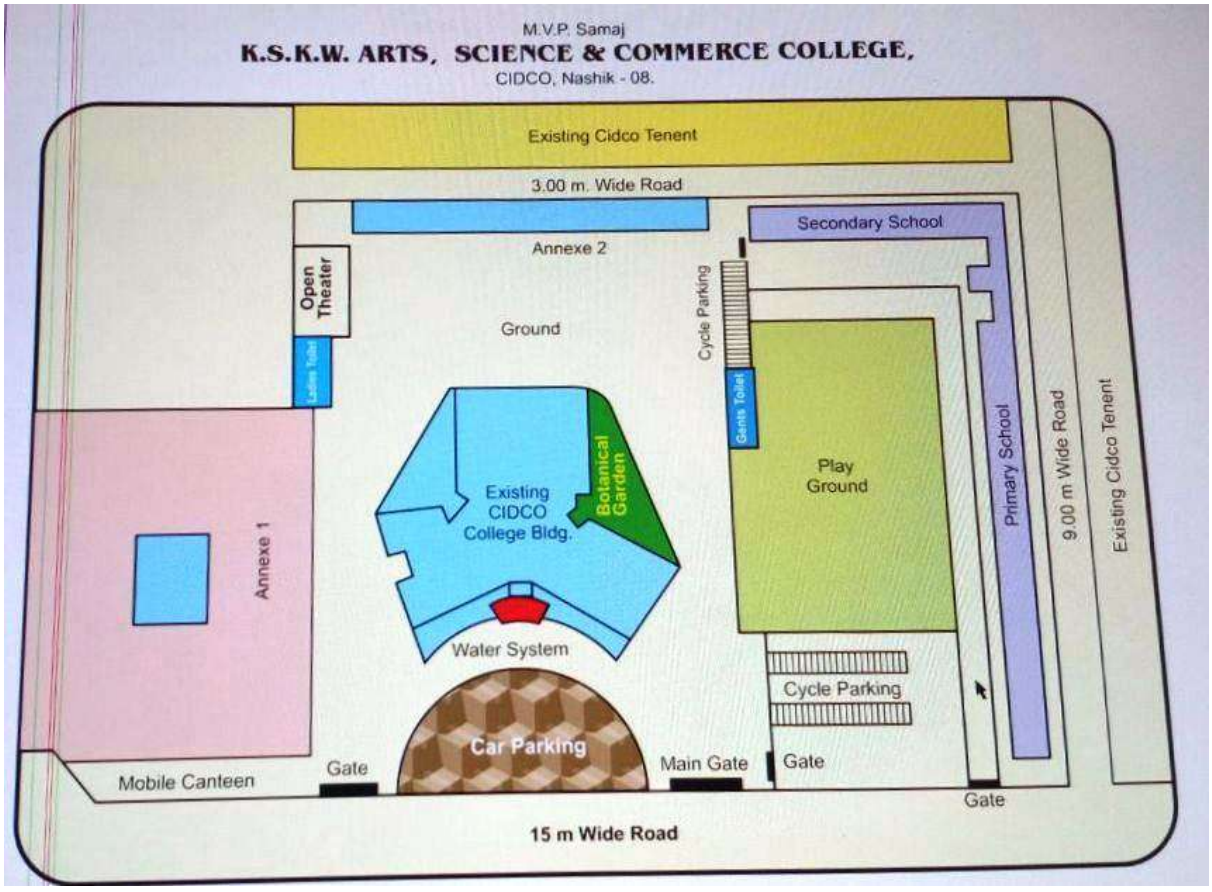


Chart showing Available area and area under construction.

Facility	Rooms	Carpet Area	Facility	Rooms	Carpet Area
Large Class Rooms	16	1096.22 sq.mtr	Botanical Garden	01	595.24 sq.mtr
Small Class Rooms	11	520.78 sq.mtr	Vermin Culture Unit	01	9 x 15=135 sq.ft.
Departmental Class Rooms	12	183.55 sq.mtr	Virtual Classroom	01	21x19 =399 sq.ft.
UG Laboratories	09	672.84 sq.mtr	English language Lab	01	26.4x14.5 =382.80 sq.ft.
PG Laboratories (Chemistry)	01	31x41 =1271 sq.ft.	Psychology Lab	01	20x14 =280 sq.ft.
PG Lab. (Physics Dark Room)	01	15.3 x 12.5 = 191.25 sq.ft.	YCMOU Centre	01	18x11 =198 sq.ft.
Computer Lab	01	25x25 =625sq.ft	NAAC Room	01	14x10 =140 sq.ft.
Library	01	45x29=1305 sq.ft.	Exam Room	01	Strong Room -12x20 = 240 sq.ft. Exam Section –12x20=240 sq. ft.
Administrative Block	01	103.42 sq.mtr	Staff Room (New Building)	02	25x21 =525 sq.ft.(New) 29x20=580 sq.ft.(Old)
Seminar Hall	01	318.47 sq.mtr	Staff & Guest Parking	01	1285 Sq. mtr.
Reading Rooms	03	1696.65 sq.ft.	Open Stage	01	47 x 19=893 sq.ft.
Utilities	08	11.25 sq.mtr	Store Room	02	13x18 =476 sq.ft.
Network Resource Centre	01	12.5x7.5=93.75 sq.ft.	IT Lab	01	21x22.8=478.80 sq.ft.
Day Care Centre	01	21x19 =399 sq.mtr	Open Space		1516Sq. mtr.

Location *	**Urban**
Campus area in sq. mts.	Total Area 3.6 acres
Built up area in sq. mts.	**27625 sq.feet**

The campus attempts to maintain eco-friendly atmosphere on the campus; the number and variety of plant species helps to maintain eco-friendly ambience. Further, to create eco-friendly awareness among the students college arranges special programmes through which the students get clear idea and importance of trees in life. There are several perennial plant species in the campus. College has undertaken various activities like plantation and beautification of campus through various drives.

List of Plants

Sr.No.	Name of Plant	Habit	Family
1	Terminalia chebula	Tree	Combretaceae
2	Terminalia belerica	Tree	Combretaceae
3	Madhuca longifolia	Tree	Sapotaceae
4	Catharanthus roseuss	Herb	Apocynaae
5	Putranjiva roxburghii	Tree	Putranjivaceae
6	Bauhinia variegata	Tree	Fabaceae
7	Centella asiatica	Herb	Apiaceae
8	Cissus quadrangularis	Climber	Vitaceae
9	Trachyspermum ammi	Herb	Apiaceae
10	Piper longum	Climber	Piperaceae
11	Hibiscus rosa sinensis	Herb	Malvaceae
12	Adhatoda vasica	Shrub	Acanthaceae
13	Cestrum nocturnum	Climber	Solanaceae
14	Bryophyllum pinnatum	Herb	Crassuliaceae
15	Kalanchoe sp.	Herb	Crassulaceae
16	Aloe vera	Herb	Liliaceae
17	Curcuma longa	Herb	Zingiberaceae
18	Asparagus racemosus	Climber	Asparagaceae
19	Phyllanthus emblica	Tree	Phyllanthacae
20	Punica granatum	Shrub	Lythraceae
21	Cymbopogon citratus	Herb	Poaceae
22	Cyperus papyrus	Herb	Cyperaceae
23	Alstonia scholaris	Tree	Apocynaceae
24	Carica papaya	Herb	Caricaceae
25	Stevia rebaudiana	Herb	Asteraceae
26	Ocimum sanctum	Herb	Lamiaceae
27	Chlorophytum comosum	Herb	Liliaceae
28	Acacia auriculiformis	Tree	*Mimosaceae*
29	Annona reticulata	Shrub	Annonaceae
30	Bauhinia Purpurea	Tree	Caesalpiniceae

Sr.No.	Name of Plant	Habit	Family
31	Caesalpinia Pulcherrima	Shrub	Caesalpiniceae
32	Callistemon Lanceolatus	Shrub	*Mimosaceae*
33	Anthocephalus Cadamba	Tree	Rubiaceae
34	Cassia fistula	Tree	Caesalpiniceae
35	Melia azedaracha	Tree	Meliaceae
36	Millingionia hortensis	Tree	Bignoniaceae
37	Polialthia longifolia	Tree	Annonaceae
38	Pongamia Pinnata	Tree	Papilionaceae
39	Samania Saman	Tree	*Mimosaceae*
40	Parkia biglandulosa	Tree	*Mimosaceae*
41	Casuarina equisetifolia	Tree	Casurinaceae
42	Dalbergia Sisso	Tree	Papilionaceae
43	Delonix regia	Tree	Caesalpiniceae
44	Grevillea robusta	Tree	Proteaceae
45	Jacaranda mimosaefolia	Tree	Bignoniaceae
46	Mangifera indica	Tree	Anacardiaceae
47	Hamelia Patens	Shrub	Rubiaceae
48	Bougainvillea spectabilis	Climber	Nyctaginaceae
49	Araucaria columnaris	Tree	Aurocariaceae
50	Roystonegia regia	Tree	Arecaceae
51	Syzygium cumini	Tree	Myrtaceae
52	Tecoma stans	Shrub	Bignoniaeceae

Last year's Recommendation

The College has ample green area and has utilized the available space generously in this regards, the college can have understanding with Local bodies to contribute in greening the spaces available with the local bodies.

Plantation drive was organised in collaboration with District sports office ON 14 August 2019 three hundred fifty plants were planted by students from our N.C.C and Sports department. Mr. Ravindra Naik, - District Sports Officer, Nashik and Principal Dr J.D.Sonkhaskar were present .

Environnemental Monitoring :

Environmental Awareness Course (EVS): This is compulsory course introduced by SP Pune University, Pune for second year students for all faculties. Under this course students learn to be environmental friendly. They are made aware of

1) Renewable and Non-renewable energy sources
2) Energy conservation.
3) E-waste management.

Air Monitoring: Air quality in the academic institute is very important for health of the students, faculty and staff of the institute. The air pollution sources in the college campus are wind, pollen grains, natural dust, vehicular emissions, and laboratory fumes etc. All the pollutants were measured by the CPCB installed continuous air monitoring station. The air pollutants monitored on regular basis are Sulphur dioxide (SO2), Oxides of Nitrogen as NO2, Suspended Particulate Matter (SPM) and Repairable Suspended Particulate Matter (RSPM) etc.

Monitoring for :

1)Température 2) Humidity 3)Pressure 4) Rainfall

Air Monitoring Report (Near Main Gate)

Meteorological Data / Environmental Conditions			
Average Wind Velocity0.98 km/h	Prominent Wind Direction		Relative Humidity (Max./Min.):83/23 %
	W-E		
Parameter	**Result**	**NAAQS #2009**	**Unit**
Sulphur Dioxide (SO_2)	**4.70**	80	$\mu g/m^3$

Nitrogen Dioxide (NO_2)	**3.40**	80	$\mu g/m^3$
Particulate Matter (size less than 10 µm)or PM_{10}	**140**	100	$\mu g/m^3$
Particulate Matter (size less than 2.5µm) or $PM_{2.5}$	**30**	60	$\mu g/m^3$
Ozone (O_3)	**BDL(DL:19.6)**	180	$\mu g/m^3$
Lead (Pb)	**BDL(DL:0.02)**	1	$\mu g/m^3$
Carbon Monoxide (CO)	**0.45**	4	mg/m^3
Ammonia (NH_3)	**BDL(DL:35)**	400	$\mu g/m^3$

Noise Environnent:

The noise levels measurements were carried out using Noise level meter. The noise level survey was carried out at seven locations, at outside as well inside the study area. The Noise levels monitored in the college campus as well as in side the classroom and found the noise level within the permissible limit.

Sr.No	Location	Minimum Reading In dB	Maximum Reading In dB	Limits
1.	Near Main Gate	37.5	38.4	75
2.	Near Back Gate	30.2	32.4	75
3.	Inside Class room	25.9	26.9	75
4.	Outside Classroom	26.4	27.8	75
5.	Inside Library	22.0	24.5	75
6.	Inside Chemistry lab	26.2	27.9	75
7.	Inside Physics lab	26.0	27.6	75

How Environment awareness issues among the students are spread:-

Here are some practical tips :-

1. We teach students about the three R's: reduce waste, reuse resources, and recycle materials.
2. We Organize tree planting days at collage and tell students why trees are important to the environment.
3. We encourage students to switch off all appliances and lights when not in use.

MAJOR PROBLEMS OF ENVIRONMENT :-

The major problems in our local environment are abandoned vehicles, air pollution, Stray animal's nuisance, mobile phone , noise, pest control, traffic management, parking and waste disposal, etc ... Air, water and soil pollution are all examples of local environmental problems.

The Ways to Prevent and manage the Environment:-

1. Painting your institution building? Use a latex paint. ...
2. Get a tune-up. Properly maintained vehicles get better gas mileage and emit fewer pollutants.
3. Don't top off your gas tank.
4. Conserve energy.
5. Don't burn your yard waste.
6. Plant a tree.
7. Park the car.

The Public awareness can be improved in the Environment by:-

Getting your Staff, students, workers, neighbours, friends, family, or even your local government involved. It's much easier and more effective to spread environmental awareness and start a local project if you collaborate with others in your community. Promoting environmental awareness is a crucial part of being an human being.

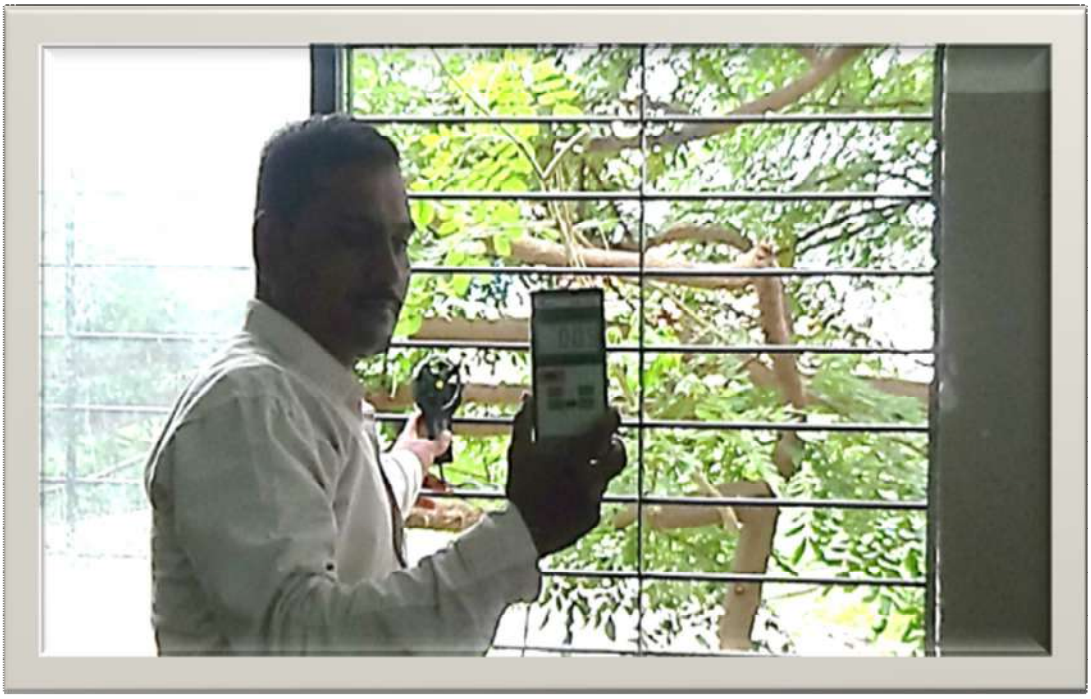
Recommendation:-

A stand of Tall trees should be planted near the front wall so as to reduce noise and air pollution from the road side.

TREE SPECIES TO BE GROWN TO REDUCE POLLUTION :-

- *Caesalpinia sappan (*Indian redwood).
- *Psidium guajava (*yellow guava).
- *Dalbergia sissoo (*shisham).
- *Albizia lebbeck (*saras).
- *Samania saman(*Rain tree).
- *Terminalia arjuna(*Arjun sadad).
- *Terminalia belerica(*Beheda).
- *Azardiricta indica(*Neem).
- *Melia azedarachta(*Bakan).
- *Delonix regia (*Gulmohar).

- *Jacaranda mimosifolia(*Neel mohar*)*.
- *Mangifera indica(*Mango).
- *Anthocephalus cadamba(*Cadamba).
- *Polialthia longifolia(*Ashoka).
- *Ficus bengalensis(*Baniyan).
- *Ficus religiosa(*Pipal).
- *Ficus recemosa(*Umbar).
- *Ficus bengimena(*Ficus).
- *Millingionia hortensis(*Butch).
- *Casuarina equisetifolia(*Suru).
- *Grevillia robusta(*Silver oak).
- *Annona squamosa(*Sitaphal).
- *Annona reticulate(*Ramphal).
- *Syzygium cumini(*Jamun).
- *Tamarindus indica(*Tamarind).
- *Ficus elastic(*Rubber tree).
- *Acacia mangium(*Acacia).
- *Tectona grandis(*Teak).
- *Spathodia campestris(*Fountain tree).
- *Kaijelia pinnata(*Gorakh chinch).
- *Saraca indica(*Sita ashok)
- *Mimusops elengi*(Bakul).
- *Peltophorum pterocarpum*(Sonmohar)
- *Cassia siamia*(Kashid)etc. tree species should be grown to reduce pollution.



Conclusions:-

There is significant environmental awareness amongst the faculty and students and initiatives taken by them are substantial. The installation of solar panels, paperless work system, composting and besides, environmental awareness course initiated by the administration shows how the campus is going to be a green. Few recommendations are added to curb the menace of waste management using eco-friendly and scientific techniques.

As part of green audit of campus, we carried out the environmental monitoring of campus which includes Noise level, Ventilation and Indoor Air quality of the class room. It was observed that Illumination and Ventilation is adequate considering natural light and air velocity present. Noise level in the campus is well within the limit.

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Uttamnagar, CIDCO, Nashik- 422 008 (Maharashtra)

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