Environment and Green Audit Report

R.K.S.D (PG) College-Kaithal (Haryana)

Audit Conducted By: EM Project Services

Principal Auditor: Satvinder Singh

Principal
R.K.S.D. College
KAITHAL

CONTENTS

S. No.	Description	Page
1	Introduction	5
2	Credentials and Certificates of Principal Auditor.	5
3	Executive Summary	11
4	Points of appreciation	12
5	NSS and NCC Activities -Documentation and Photographs	14
6	Pledge for Women Empowerment	20
7	General observation and Recommendations	22
8	Environment and Green policy	23
9	Description of campus	27
10	Green and Environment auditing	27
11	Water Audit	28
12	Theoretical Water consumption as per NBC-2016 norms	28
13	Water distribution and proposed metering panel	31
14	Annual Theoretical water balance	32
15	Water use study-Flow of installed fixtures	33
16	Observations on water use	35
17	Turf Area-R.K.S. D (P.G) College-Kaithal	36
18	Theoretical water consumption-landscape	36
19	Share of annual water consumption	37
20	Inventory of Toilet	38
21	Rainwater harvesting system	45
22	Auditing for Energy management	46
23	Energy performance Index	46

S. No.	Description	Page
24	Renewable Energy	47
25	Waste management policy	51
26	Auditing for waste management	54
27	E-waste disposal	55
28	Canteen waste handling practice	56
29	Auditing for Green Campus management	57
30	Health audit	57
31	Noise Pollution	58
32	Decibel Measurement	59
33	Transportation practices	60
34	Procurement practices to be followed	60
35	Management of Paper use and Policy goals	61
36	E-Library	64
37	Plantation Policy, Plantation and Inventory	73
38	Photographs of plantation	77
39	Air quality	82
40	Detail of refrigerant	86
41	Eco friendly housekeeping material	88
42	Ventilation assessment	90
43	Chemistry lab	98
44	Fire safety	100
45	Custodial chemicals	101
46	Sustainable development goals	101
47	Summarization of Green and Environment Audit	102

S. No.	Description	Page
48	Annexure-A-Photographs	106
49	Annexure-B-Excerpts from Energy Conservation Code	111
50	Annexure-C-Recorded lux level	112
51	Annexure-D-Standard for water consumption as per NBC-2016	113
52	Annexure-E-Handling and disposal of CFL's and Fluorescent tubes	114
53	Annexure-F- Limits of sound as per NBC-2016	116
54	Annexure-G-Guidelines for Environment friendly and green initiatives	117
55	Annexure-H-List of plantations	121
56	Annexure-I-List of hazardous chemicals	126

Introduction

We at EM Project Services are grateful to the management and principal Dr. S.K. Goyal of R.K.S.D (P.G) College-Kaithal for awarding the work of Environment and Green audit of R.K.S.D (P.G) College-Kaithal. We are especially thankful to Dr. Gagan Mittal and other members of team for their proactive approach and providing us well maintained relevant data required for audit. We are also thankful to the other concerned in charge of various department for their cooperation during audit study at site and also the members of staff for their active involvement in audit on site study.

The following members of EM Project Services was part of audit study at R.K.S.D (P.G) College-Kaithal.

1. Mr. Satvinder Singh-Principal Auditor
2. Mr. Ranjit Singh -Data surveyor cum senior instrument technician
3. Mr. Ashwani-Instrument technician

Credential of Mr. Satvinder Singh -Principal Auditor are as under

Qualifications:

1. Graduate Electrical Engineer.
2. Postgraduate in Business Administration.
3. Attended five days preparatory professional development hours for PMP (USA) certification.

Certifications:

1. BEE Accredited Energy Auditor-AEA-0294
2. Energy Conservation Building Code Master trainer (Under UNDP-GEF-BEE Project)
3. Indian Green Building Council-Accredited Professional
4. Lead Auditor-ISO-14001-Environment Management system.
5. Certified Monitoring and Verification practitioner-(AEE-USA)
6. Galleleo Master Certificate-Renewable Energy (U.K)
7. Lead Auditor-ISO-50001- BSI-16001 (Energy management system)
8. Lead Auditor OHSAS-18001
9. Attended World Energy conference in USA on three occasions in Washington D.C, Atlanta and Charlotte (North Carolina)

Copies of Certificates of Sh. Satvinder Singh-Principal Auditor

FORM III
(Refer regulation 7(1))
Bureau of Energy Efficiency
REGISTER CONTAINING LIST OF ACCREDITED ENERGY AUDITORS

Serial Number: (AEA- 294)		**As on: (23/10/2018)**
A.	**Accreditation information in respect of accredited energy auditor**	
1	Name of accredited energy auditor	Sh. Satvinder Singh
2	Father's name	Sh. Kartar Singh
3	Date of certification as Energy Manager	Certificate No:5489
4	Date of passing the examination in "Energy Performance Assessment for Equipment and Utility Systems"	04 Sep- 2008
5	Examination Registration Number of (i) Energy Manager (ii) "Energy Performance Assessment for Equipment and Utility Systems"	EA-9011 EA-9011
6	Certificate Registration Number of (i) Energy Manager (ii) "Energy Performance Assessment for Equipment and Utility Systems"	Certificate No:5489 Certificate No: 3824
7	Date of issue of accreditation certificate	(to be filled by BEE)
8	Professional postal address with Pin Codes of the accredited energy auditor	A-615, Shastri Nagar, Delhi-110052
9	E-mail address	satvindersinghmaan@gmail.com
10	Telephone numbers with STD Code (R) (O) Mobile No.	011-23642702 (R) Mobile : 9810021003 8860565499
11	Remarks	

Photograph of the energy auditor

CII/LEHS/INDIA-0513/89

Confederation of Indian Industry

CII-ITC Centre of Excellence for Sustainable Development

NABET

Environmental, Occupational Health & Safety Management Systems Auditor/Lead Auditor Training Course (As Per ISO 14001:2004 & OHSAS 18001:2007)

This is to certify that

Satvinder Singh

has successfully completed the

Environmental, Occupational Health & Safety Management Systems Auditor/Lead Auditor Training Course

organised by
Confederation of Indian Industry
Centre of Excellence for Sustainable Development

held at **Hyderabad**

from ***19th August 2013*** *to* ***23rd August 2013***

"Course Accredited With NABET"
(National Accreditation Board for Education and Training)
Accreditation No. : LEHS 1315 101
"For Auditor Registration purposes this certificate is valid for Three years from the initial certification date"

Seema Arora
Executive Director

Confederation of Indian Industry
CII-Sohrabji Godrej Green Business Centre

Indian Green Building Council

Indian Green Building Council

hereby certifies that

Satvinder Singh

has successfully demonstrated knowledge on the Green Building Design & Construction, Building Standards & Codes, IGBC Resources & Processes and Green Design Strategies & their Impacts, required to be awarded the title of

IGBC Accredited Professional

S Raghupathy
Senior Director & Head
CII-Godrej GBC

15 May 2010

Dr Prem C Jain
Chairman
Indian Green Building Council

MTN74653

EEC

Steinbeis
Centre for Technology Transfer India

Training course held at Steinbeis India:
a European Energy Centre (EEC) CENTRE OF EXCELLENCE

The European Energy Centre

GALILEO MASTER CERTIFICATE

Developed in line with the European Project EMTEU
Energy Management Technician in Europe

EMTEU Lifelong Learning Programme
Education and Culture DG

This certificate is awarded to

Satvinder Singh

on completion of the **Hands on Engineering Workshop on Solar PV – Technology & Business** training course held on the 2nd-5th May 2012 in Bengaluru

CERTIFICATE OF VALIDITY:
This Galileo Master Certificate is only valid with the participant's name published on the official website of the European Energy Centre (EEC). Visit the following page to cross check the participant's name:
http://www.euenergycentre.org/energy-certificate/international/155-steinbeis
For additional information email training@EUenergycentre.org

The Director
European Energy Centre

European Energy Centre Ltd registered in Scotland No. 371195 Registered Office: 68/1 Spottiswoode Street Edinburgh EH9 1DH, United Kingdom

BUREAU VERITAS
Certification

Certificate of Successful Completion

This is to certify that

Satvinder Singh

has successfully completed the course assessment and examination for the

Energy Management Systems Auditor / Lead Auditor Training Course
(Based on ISO 50001:2011 Standard)

Course No. A17621 certified by the International Register of Certificated Auditors (IRCA). This course satisfies the training requirements for the IRCA EnMS Auditor Certification Scheme.

Held on: ***August 04 – 08, 2015*** at: ***Hyderabad, India***

Signed: _____
General Manager -Training Services, SAR, Global Accreditation, Training

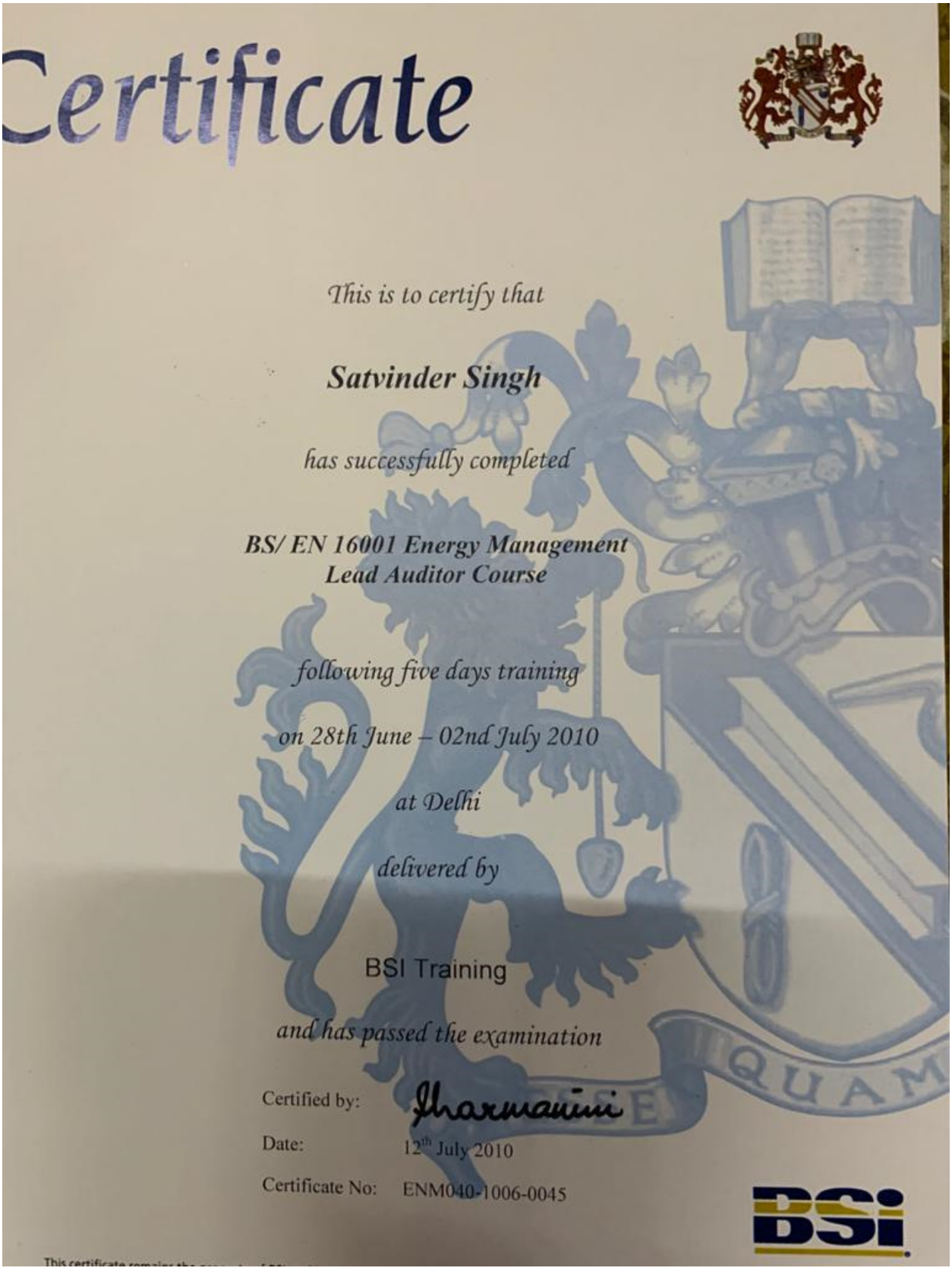
Date: ***December 08, 2015***

Certificate Serial No: ***ENMS/15/IN/500***

Course No: ***A17621***

IRCA CERTIFIED TRAINING COURSE

The Certificate is valid for 3 years for the purpose of Auditor Certification by IRCA



Certificate

This is to certify that

Satvinder Singh

has successfully completed

BS/ EN 16001 Energy Management
Lead Auditor Course

following five days training

on 28th June – 02nd July 2010

at Delhi

delivered by

BSI Training

and has passed the examination

Certified by: Dharmanni

Date: 12th July 2010

Certificate No: ENM040-1006-0045

BSi

This certificate remains the property of BSI

Executive Summary

An environmental audit is a snapshot in time, in which one assesses campus performance in complying with applicable environmental laws and regulations. Though a helpful benchmark, the audit almost immediately becomes outdated unless there is some mechanism in place to continue the effort of monitoring environmental compliance. This audit report contains observations and recommendations for improvement of environmental consciousness.

A nation's growth starts from its educational institutions, where the ecology is thought as a prime factor of development associated with environment. A clean and healthy environment aids effective learning and provides a conducive learning environment. Educational institutions now a day are becoming more sensitive to environmental factors and more concepts are being introduced to make them eco-friendly.

With pro-active approach of management and staff for improvement of environment and reduction of impact of college activities on climate and also improvement of indoor air quality and optimization of energy use, there is always an inclination of all related stake holders that is teaching, non-teaching staff and other support staff the college is continually functioning for improvement of environment in and around college premises and mitigation of impact of its activities on climate.

To preserve the environment within the campus, various viewpoints are applied by all the concerned stake holders. R.K.S.D (P.G) College-Kaithal-to solve their environmental problems through formulation of Environment and green policy, Plantation policy, commitment for empowerment of women and their active participation in improvement of interior and surrounding environment of college premises.

The college administration is working towards promotion of the energy savings demonstrated through energy audit and there is already renewable energy (Solar PV plant-86 kWp is already installed on various towers and Workshop building., recycle of waste, water use reduction, Rain water harvesting, regular plantation activities with native species, judicious management of all kind of waste as per statutory procedures, reduction of paper use and other sustainable practices. The location of college is in main market thus avoidance of travel for purchase of stationary and daily requirement of staff and students.

The college is also instrumental for the well-being of all stake holders and a regular arrangement with Dr. Shah hospital near old bus stand Kaithal for regular treatment of staff and students in case of any requirement, reduction of paper use and also mitigating impact of transportation

activities of students with 80 % of students using public transport, teaching and non-teaching staff by shared transport, encouragement of car-pooling and many other sustainable practices.

There are instruments that contains mercury seen installed.

There is an issue of ventilation observed in the following areas.

a. Chemistry Lab,

The issue of ventilation is required to be addresses with designed mechanical ventilation for

and mixed ventilation, Natural and mechanical for workshop area. For Chemistry Existing exhaust is required to be provided with hood and additional exhaust as per design calculation is required to be provided.

Points of Appreciation

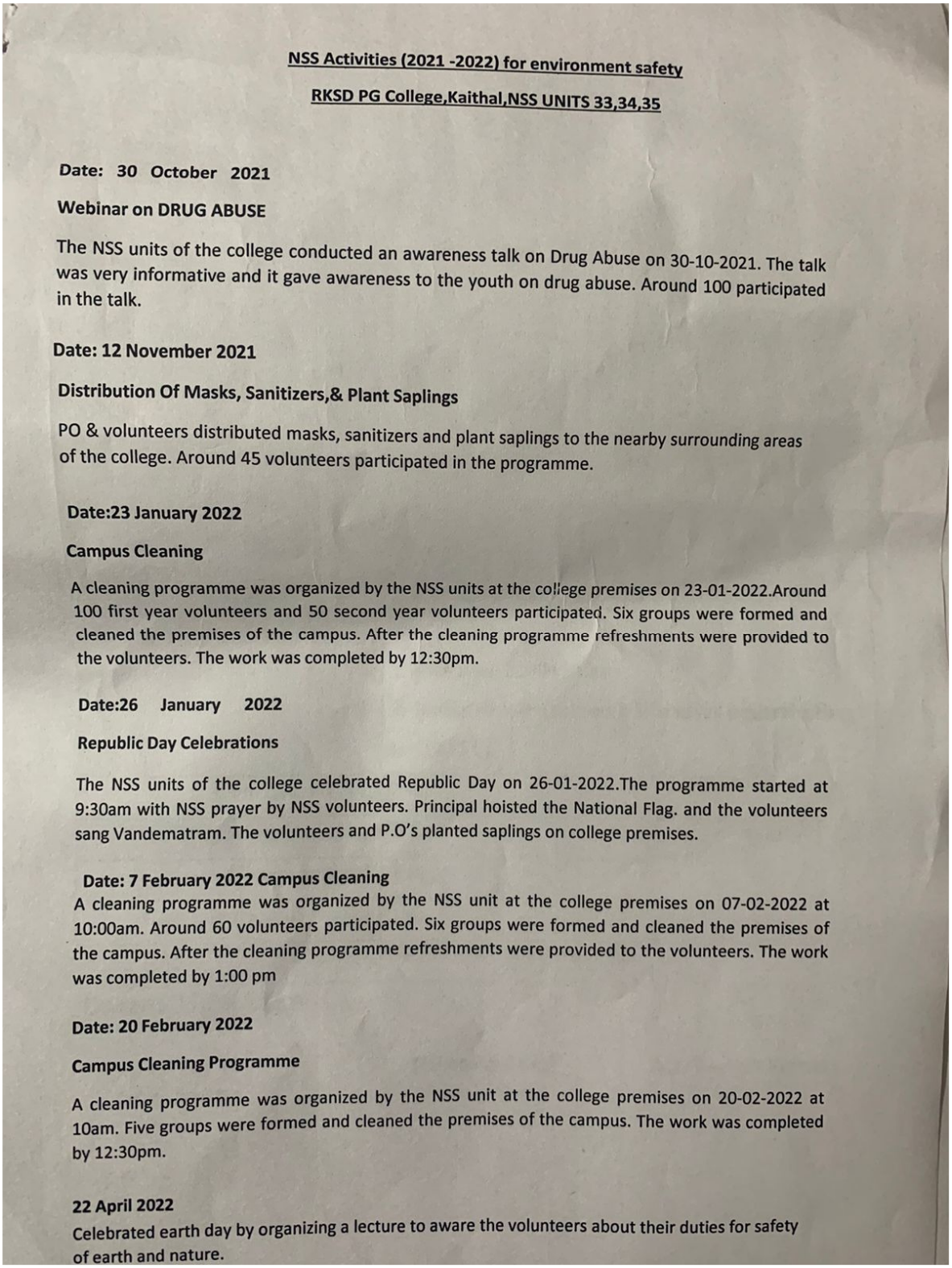
1. The staff of R.K.S.D (P.G) College-Kaithal are quite aware and proactive in approach towards environmental aspects.
2. There is strong data base maintained and kept updated at all times which is beneficial for management of Environmental and Green aspects related to activities of college.
3. Data for electrical use is also recorded and maintained and it reflects the sustainable approach of the R.K.S.D (P.G) College-Kaithal.
4. Rainwater is captured and re-charged into 5 nos. discharge wells through pipes. Accumulated rainwater of main roads is also captured and re-charged into ground.
5. There is a commitment towards Women empowerment related to climate and active participation of women.
6. There is an environment policy in place that covers aspects of air quality, environment and sustainability in extensive manner.
7. There is plantation policy and plan for managing and mitigation of impact on climate.
8. E-Library: Records of E-Library are maintained. Usage data of e- books is maintained and monitored.
9. The staff and students of college are taking active interest for improvement of environment.
10. There are efforts to reduce food waste generation.
11. Wasted food is composted.
12. Composting pits are there in place. Botanical waste and post use food waste is regularly composted and converted to manure used for landscape and plantation use.
13. The college is regularly conducting department activities for creating awareness and sensitization of students, faculty members and other staff members. The details are shown separately.

14. EVS activities

1. Awareness program for sensitization and awareness of students are regularly conducted through quizzes and painting competition organized in college.
2. Awareness drive towards environment also conducted in neighbouring villages for conducting awareness amongst villagers.

15. NSS and NCC Activities: There are a number of activities conducted. Some of these are attached in this report.
16. The college is committed to women empowerment in all segments. Special emphasis has been given in commitment towards women empowerment. Document is attached.

NSS and NCC Activities-Documentation and Photographs



NSS Activities (2021 -2022) for environment safety

RKSD PG College,Kaithal,NSS UNITS 33,34,35

Date: 30 October 2021

Webinar on DRUG ABUSE

The NSS units of the college conducted an awareness talk on Drug Abuse on 30-10-2021. The talk was very informative and it gave awareness to the youth on drug abuse. Around 100 participated in the talk.

Date: 12 November 2021

Distribution Of Masks, Sanitizers,& Plant Saplings

PO & volunteers distributed masks, sanitizers and plant saplings to the nearby surrounding areas of the college. Around 45 volunteers participated in the programme.

Date:23 January 2022

Campus Cleaning

A cleaning programme was organized by the NSS units at the college premises on 23-01-2022.Around 100 first year volunteers and 50 second year volunteers participated. Six groups were formed and cleaned the premises of the campus. After the cleaning programme refreshments were provided to the volunteers. The work was completed by 12:30pm.

Date:26 January 2022

Republic Day Celebrations

The NSS units of the college celebrated Republic Day on 26-01-2022.The programme started at 9:30am with NSS prayer by NSS volunteers. Principal hoisted the National Flag. and the volunteers sang Vandematram. The volunteers and P.O's planted saplings on college premises.

Date: 7 February 2022 Campus Cleaning

A cleaning programme was organized by the NSS unit at the college premises on 07-02-2022 at 10:00am. Around 60 volunteers participated. Six groups were formed and cleaned the premises of the campus. After the cleaning programme refreshments were provided to the volunteers. The work was completed by 1:00 pm

Date: 20 February 2022

Campus Cleaning Programme

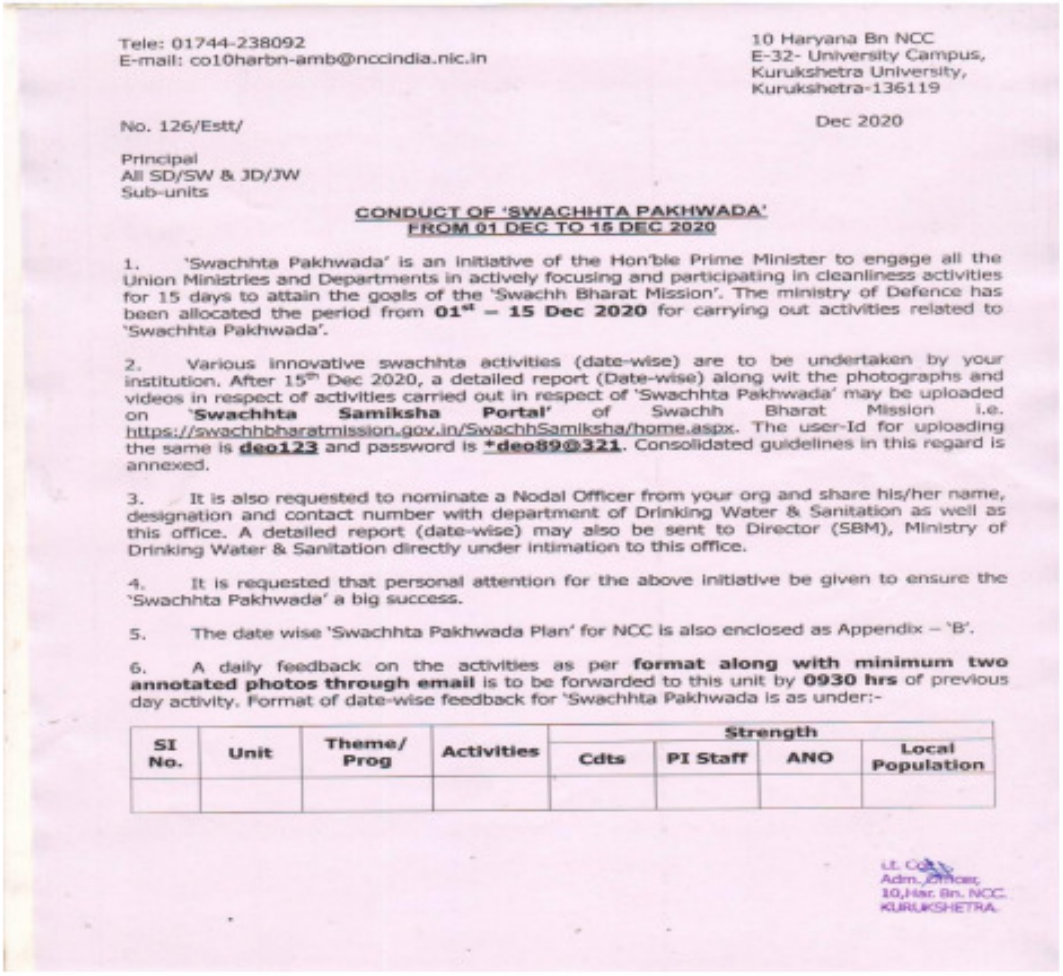
A cleaning programme was organized by the NSS unit at the college premises on 20-02-2022 at 10am. Five groups were formed and cleaned the premises of the campus. The work was completed by 12:30pm.

22 April 2022

Celebrated earth day by organizing a lecture to aware the volunteers about their duties for safety of earth and nature.

A. *Extension and Outreach Programmes conducted through* NCC:

1. NCC cadets of R.K.S.D. (PG) College, Kaithal participated in Swachhta Pakhwada Programme from Dec 1 to Dec 15, 2020 in which cadets clean their homes and College campus and also motivate people for importance of cleanliness. Total 150 cadets participated in it.



Tele: 01744-238092
E-mail: co10harbn-amb@nccindia.nic.in

10 Haryana Bn NCC
E-32- University Campus,
Kurukshetra University,
Kurukshetra-136119

No. 126/Estt/

Dec 2020

Principal
All SD/SW & JD/JW
Sub-units

CONDUCT OF 'SWACHHTA PAKHWADA'
FROM 01 DEC TO 15 DEC 2020

1. 'Swachhta Pakhwada' is an initiative of the Hon'ble Prime Minister to engage all the Union Ministries and Departments in actively focusing and participating in cleanliness activities for 15 days to attain the goals of the 'Swachh Bharat Mission'. The ministry of Defence has been allocated the period from **01st – 15 Dec 2020** for carrying out activities related to 'Swachhta Pakhwada'.

2. Various innovative swachhta activities (date-wise) are to be undertaken by your institution. After 15th Dec 2020, a detailed report (Date-wise) along wit the photographs and videos in respect of activities carried out in respect of 'Swachhta Pakhwada' may be uploaded on **'Swachhta Samiksha Portal'** of Swachh Bharat Mission i.e. https://swachhbharatmission.gov.in/SwachhSamiksha/home.aspx. The user-Id for uploading the same is **deo123** and password is ***deo89@321**. Consolidated guidelines in this regard is annexed.

3. It is also requested to nominate a Nodal Officer from your org and share his/her name, designation and contact number with department of Drinking Water & Sanitation as well as this office. A detailed report (date-wise) may also be sent to Director (SBM), Ministry of Drinking Water & Sanitation directly under intimation to this office.

4. It is requested that personal attention for the above initiative be given to ensure the 'Swachhta Pakhwada' a big success.

5. The date wise 'Swachhta Pakhwada Plan' for NCC is also enclosed as Appendix – 'B'.

6. A daily feedback on the activities as per **format along with minimum two annotated photos through email** is to be forwarded to this unit by **0930 hrs** of previous day activity. Format of date-wise feedback for 'Swachhta Pakhwada is as under:-

SI No.	Unit	Theme/ Prog	Activities	Strength			
				Cdts	PI Staff	ANO	Local Population

Lt. Col.
Adm. Officer,
10,Har. Bn. NCC.
KURUKSHETRA.


B. *Extension and Outreach Programmes conducted through* NSS:

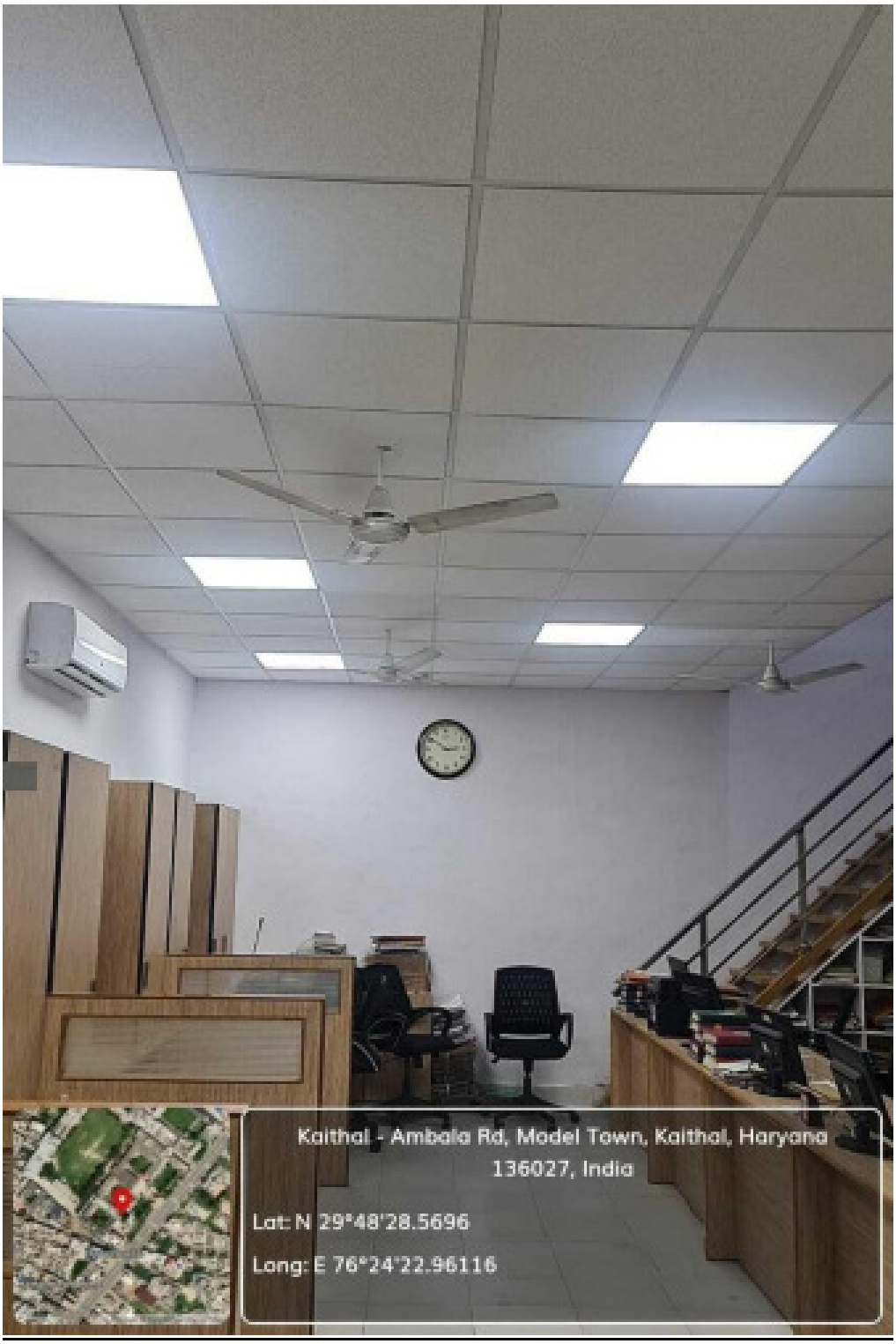
1. Harit Haryana Abhiyan: NSS volunteers planted trees in the neighboring places, villages under Harit Haryana Abhiyan and posted their pictures on Geo Tagging App on 20 August 2020.

2. **Lecture on Road Safety Awareness** on January 29, 2021 to observe Road Safety Month (Jan 17 to Feb 16) was organized in Shergarh Village, Sh. Rajbir Shyokand, Road safety manager, Ashok Leyland, Kaithal was the resource person. An awareness rally was also run by volunteers. 80 volunteers and 3 program officer participated in programme.

3. **NSS volunteers along with Programme officers visited Old Age home** on 31 January 2021 at Kaithal. They distributed some eatables and spent quality time with them. The elder people gave their blessings to the volunteers and asked them to obey their parents, give respect and love to them. Volunteers felt very enthusiastic after the visit.

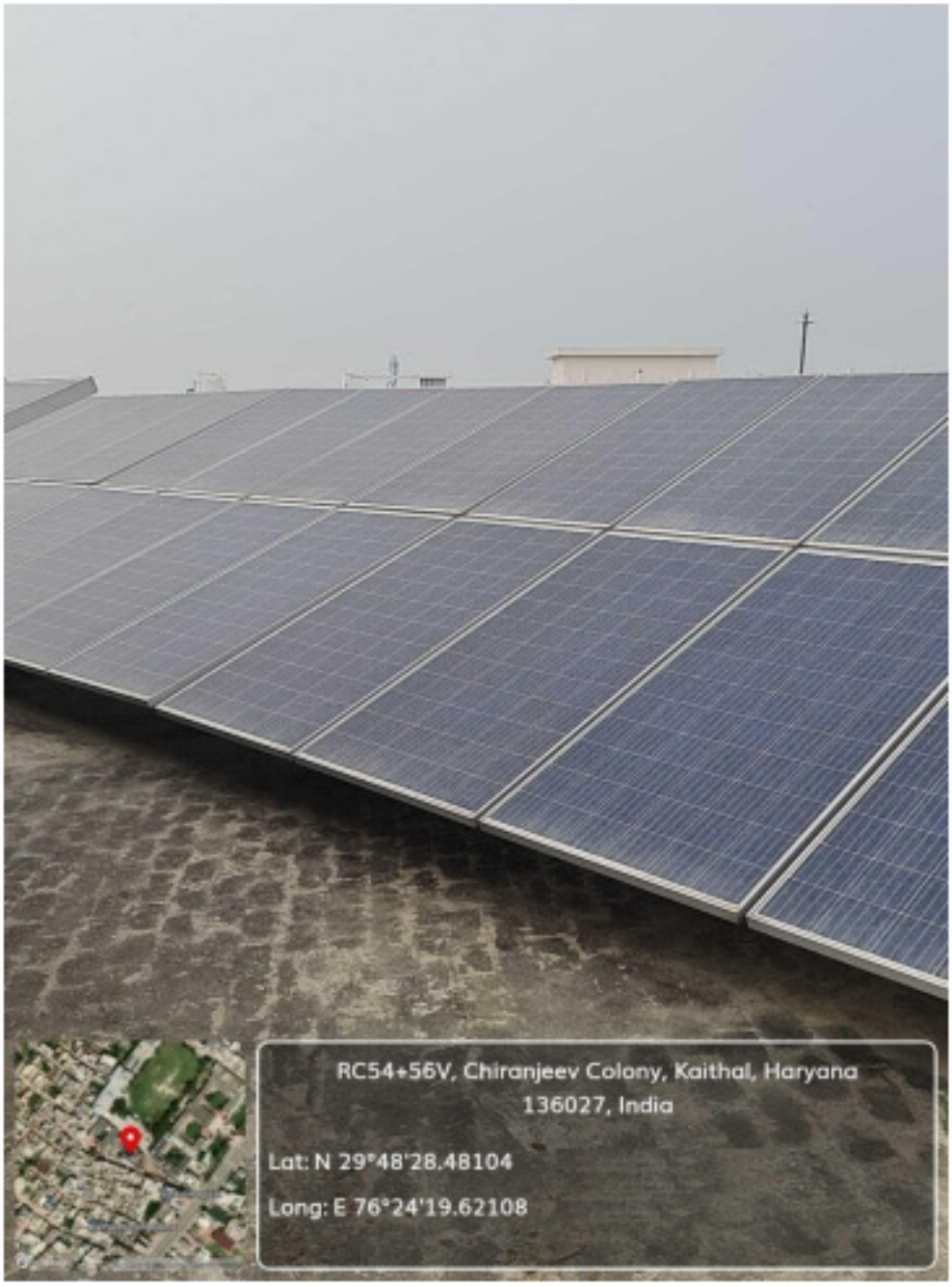
4. **COVID Vaccination Awareness Drive** was organized by NSS units in village Shergarh on Feb 1, 2021. Awareness rally was organized where 70 volunteers participated. An extension lecture was delivered by Dr. Jitender Gill.

Use of LED Lights



Sustainable use of resources

Solar Power Plant



Sustainable use of resources

PLEDGE FOR WOMEN EMPOWERMENT
R.K.S.D (P.G) College-Kaithal

ESTD. 1954

RKSD (PG) COLLEGE, KAITHAL

('A' Grade, NAAC Accredited)
Affiliated to Kurukshetra University, Kurukshetra
Ph. 01746-222368
Website: rksdcollege.ac.in; E-mail: principal@rksdcollege.ac.in

Ref. No. .....

Dated .....

WOMEN EMPOWERMENT PLEDGE

We the teaching, non-teaching staff and all the students of R.K.S.D (P.G) College, Kaithal pledge together for women empowerment, and we celebrate advancement of women in all her facets ensuring her safety, security and overall well-being.

We pledge to promote equality and freedom for all, through community initiatives without any gender biases and prejudices. We also pledge to keep our college environment and its surroundings, hygienic, healthy, and clean through active participation of women for the overall sustainable development.

Dr. Sanjay K Goyal
Principal

1. Dr. Harinder Gupta, Principal Incharge, RKSD (PG) College (Evening Session)
2. Dr. C.B. Saini, Head, Department of Political Science
3. Dr. S.S. Mehla, Head, Department of Mathematics
4. Dr.Rajbir Parashar, Head Department of English
5. Dr. A.K. Narula, Head, Department of Physics (and Computer Science)
6. Dr. Sushil Gupta, Head, Department of Botany
7. Dr. Ramphal Moun, Head, Department of Hindi
8. Dr. Gagan Mittal, Head, Department of Zoology
9. Mr. Ajay Sharma, Head, Department of Commerce
10. Dr. Gurdeep Bhola, Head, Department of Physical Education
11. Dr. Shilpy Aggarwal, Head, Department of Chemistry
12. Dr. V.P. Goyal, Head, Department of Economics
13. Dr. Vinay Singhal, Head, Department of Sanskrit
14. Dr. Rakesh Mittal, Head, Department of History
15. Mr. Rajesh Singh, Head, Department of Electronics
16. Dr. Raghubir Lamba, Head, Department of Geography
17. Mrs. Shinu Singla, Department of Punjabi
18. Mrs Rachna Sardana, Convener, Women Cell
19. Mr. Anil Garg, Office Superintendent

General observations and Recommendations

- Display of Environment and Green policy at following prominent locations inside the premises.
  a. Near main gate
  b. Cafeteria
  c. Academic Blocks
  d. Stadium
  e. Library Entrance
- Signage for Tobacco free campus required to be displayed at prominent locations and also these required to be displayed at main entrance and other prominent areas inside the campus.
- Single stack plumbing system is in place thereby increasing the avoidable load on STP and also increasing the electricity consumption for treatment of mixed water.
- Two stack plumbing system is recommended for future augmentation for separation of Black and grey water for energy savings and not stressing the capacity of installed STP.
- Signage for avoiding Food wastage be displayed at important locations of like cafeteria in campus.
- Signage for Water conservation be displayed at important locations in campus.
- Signage for plastic free campus be displayed.
- Signage for Segregation of waste.
- Provision of combined dust bins as a set at a common location.
- No fume exhaust hood in chemistry lab provided.
- Lights were found switched on in unoccupied area. Awareness is required to be created amongst all faculty and non-teaching staff of college.
- Some Air Conditioners with harmful refrigerant have been installed. Immediate action be initiated for replacement of ACs with zero ODP refrigerant.
- In future all the glasses of window when replaced should be provided with spectrally selective glass of low Solar heat gain co-efficient and high visual light transmittance.
- Cool Roof: As per ECBC for improving the indoor thermal comfort of top floor in building and also reducing energy use of top floor by providing cool roof at terrace level.
- Inventory of all installed dust bins is required to be maintained.

Cool roof: roof with top layer of material that has high solar reflectance and high thermal emittance properties. Cool roof surfaces are characterized by light colors so that heat can be rejected back to the environment.

Excerpts from ECBC are attached in this report-Annexure-C

- Ventilation: There are issues with ventilation of Chemistry lab.

ENVIRONMENT AND GREEN POLICY

R.K.S.D (P.G) COLLEGE-KAITHAL

POLICY DOCUMENT

ON

'GREEN CAMPUS'

RKSD (PG) COLLEGE, KAITHAL

NAAC 'A' Grade accredited, Affiliated to Kurukshetra University, Kurukshetra

Ambala Road, Kaithal -136027 (Haryana)

Policy Statement

The R.K.S.D COLLEGE (P.G) Kaithal is committed to manage its estates in accordance with responsibilities towards the environment. These responsibilities shall be demonstrated within the following areas as a minimum:

- **Tobacco Free premises:** The college administration pledges to make the premises totally tobacco free. No smoking or other type of tobacco products shall be allowed inside the College campus.
- **Purchasing:** In purchasing its services, materials, equipment and consumable items, the College will, where possible, purchase items produced in ways which do least environmental harm, which are not supplied with excessive packaging, which are benign or at least harmless in their effect on the environment. Where possible, preference will be given to local or regional suppliers to maximize the college input to the local community as well as reduction of environmental impact due to transportation.
- **Cleaning:** The R.K.S.D COLLEGE (P.G) Kaithal shall use cleaning products based on environmental considerations as well as cost and suitability. It will monitor its working practices with a view to administering dosages so as to reduce the risk of over concentration and excess residue of unused cleaning mixtures finding their way into piped waste disposal systems.
- **Waste Disposal and Recycling:** The R.K.S.D COLLEGE (P.G) Kaithal, will seek to minimize its generation of waste by reduction of purchased materials where this does not compromise its primary functions, or by re-use of materials within or outside the college campus. Where reduction or re-use is not feasible, materials will be recycled wherever possible.
- **Energy:** The College is environmentally responsible for its use of energy, and will therefore consider the sources, type, origin and destination of energy input and output throughout the College. This will require careful monitoring of consumption, the elimination of excessive or unnecessary use, and an ongoing program of energy conservation. There is already a renewable energy solar PV plants installed and in future also efforts are underway to use renewable energy to the extent possible for mitigation of impact of energy use by college on environment. Energy Performance Index (EPI) of college shall be reviewed and monitored.
- **New Build and Building Refurbishment:** The College will ensure that whenever new construction or refurbishment, work is planned and executed in a manner which

reflects environmentally responsible approaches defined by the National Building Code-2016.

- **Green Travel Plan:** The college actively promotes the use of public transport, walking and cycling. The College owns vehicles and requires staff where possible to use public transport when on college assignments. This plan is regularly reviewed. The travel of students shall also be encouraged through public transport for those who are not using shared college buses for commuting to and from college.
- **Food Policy:** The College, will ensure that decisions pertaining to the purchase of food, together with the use and disposal of plastic crockery/cutlery, should at all times include environmental implications as well as such factors as cost and nutritional value.
- **Environmental Rules and Guidelines:** The college commit to ensure compliance to extant pollution control and other applicable environmental guidelines of State and National Government.
- **Water Use:** The college intends to promote optimization of water use by avoidance of wastage, treatment, and re-use of black water for other possible uses.
- The college also commits for Plastic free environment in college premises.
- The policy shall be reviewed annually or as per requirement.

Dr. Sanjay K. Goyal
Principal

Description of Campus

The R.K.S.D (P.G) College-Kaithal is located at Ambala Road, Kaithal. The coordinates of the R.K.S.D (P.G) college are latitude 29 degrees 48' 28" and Longitude 76 degree 24' 21" at an altitude of 240 meters above mean sea level.

As per NBC-2016 and ECBC-2017, climate of is composite which means that 's climate has high number of heating degree days and also higher number of cooling degree days, thus requiring more energy in winter for heating and also for cooling in summer.

Campus is spread across 13 acres.

Green and Environment audit

Pre -Audit meeting

A pre-audit meeting provided an opportunity to reinforce the scope and objectives of the audit and discussions were held on the practicalities associated with the audit. This meeting is an important prerequisite for the green audit because it is the first opportunity to meet the College concerned personnel for audit and deal with any concerns.

Management's Commitment

The Management of the college has shown the commitment towards the green auditing during the pre-audit meeting. They were ready to encourage all green activities. It was decided to promote all activities that are environment friendly such as awareness programs on the environment, campus farming, planting more trees on the campus etc., after the green auditing.

Scope and Goals of Green and Environment Auditing

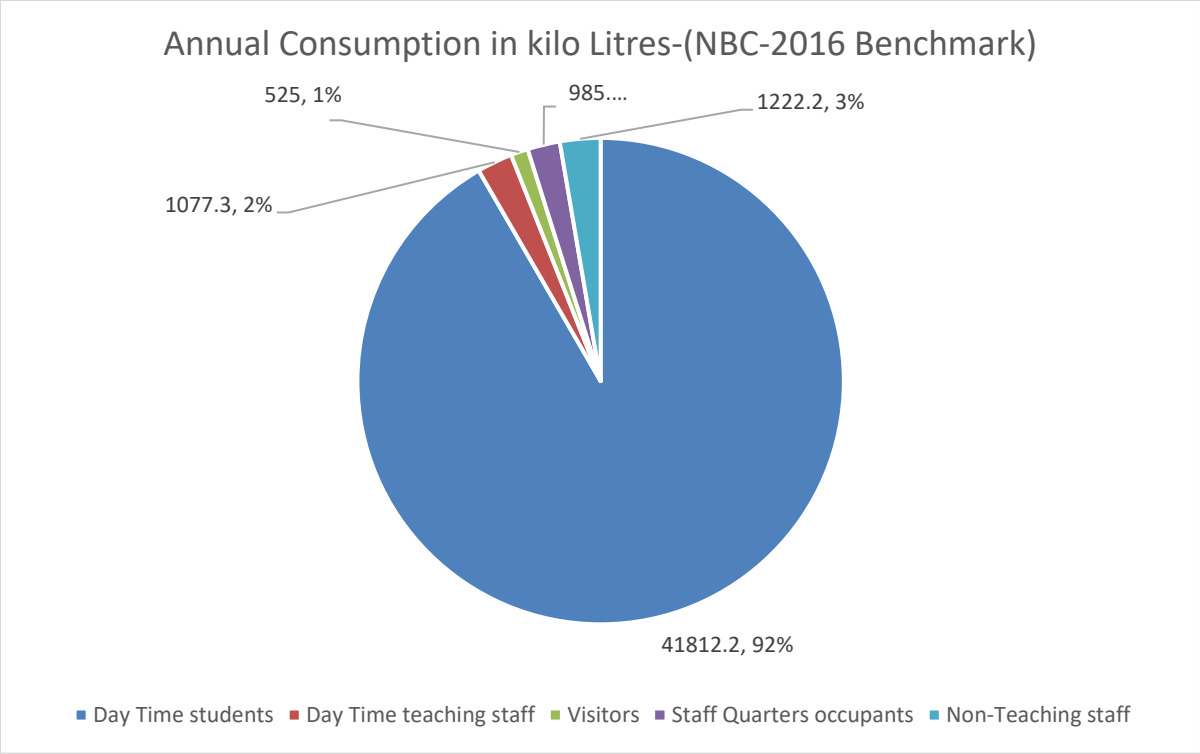
A clean and healthy environment aids effective learning and provides a conducive learning environment. There are various efforts around the world to address environmental education issues. Green Audit is the most efficient and ecological way to manage environmental problems. It is a kind of professional care which is the responsibility of each individual who are the part of Economical, financial, social, environmental factor. It is necessary to conduct green audit in college campus because students become aware of the green audit, its advantages to save the planet and they become responsible citizen of our country.

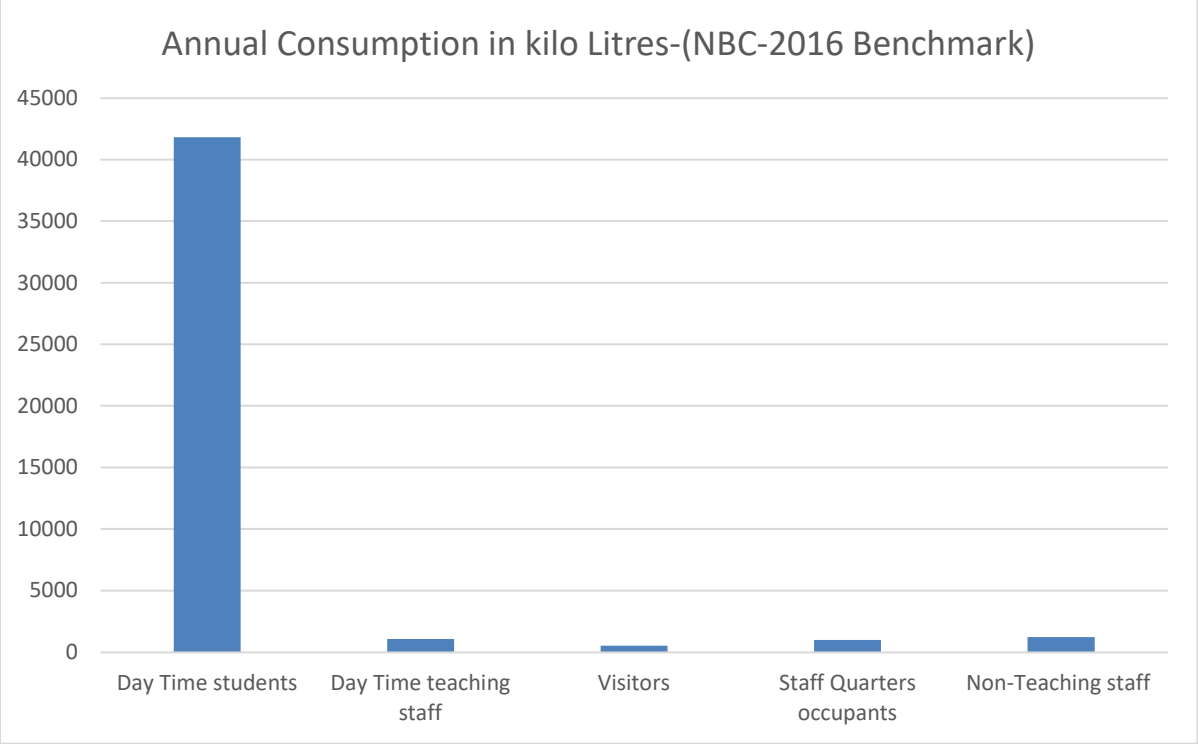
Water Audit

THEORETICAL WATER CONSUMPTION AS PER NBC-2016 NORMS

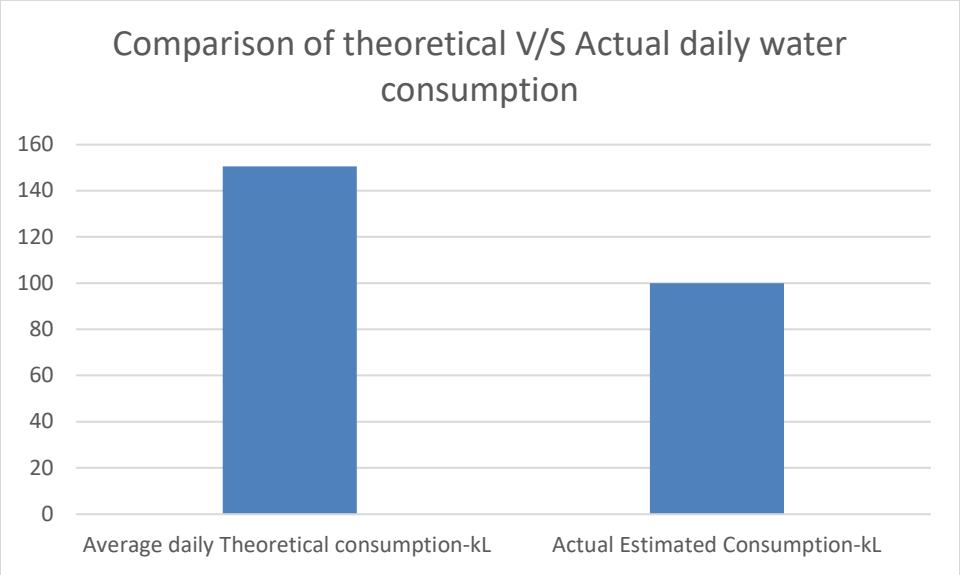
Benchmark annual Consumption of water - as per National Building Code-2016- R.K.S.D (P.G) College-Kaithal -Human Consumption						
S. No.	**Type of Occupants**	**No. of Occupants/Visitors**	**Water Consumption As per NBC-2016-Norms**	**Theoretical Consumption-Kilo Litres per day-NBC**	**No. of days in year-Use**	**Annual Consumption in kilo Litres-(NBC-2016 Benchmark)**
1	Day Time students	5162	45	232.29	180	41,812
2	Day Time teaching staff	133	45	5.985	180	1,077
3	Visitors	125	15	1.875	280	525
4	Staff Quarters occupants	20	135	2.7	365	986
5	Non-Teaching staff	97	45	4.365	280	1,222
	Total			**202.005**		**45,622**

SHARE OF ANNUAL WATER CONSUMPTION-AS PER NBC-2016 BENCHMARK-HUMAN USE





From above charts it is observed that 92 % of total annual water consumption-Theoretical allowance is for daytime students. Only 8 % is used by teaching, non-teaching staff, visitors and in staff quarters.
The main focus of water conservation should be laid on student's water consumption
Special attention should be given in toilets used by students and there should be regular water leak audits conducted and report should be documented.



From the above graph it is evident that present actual consumption of water is lower than theoretical benchmark of water uses as per NBC-2016.

Water requirement as per NBC-2016 is attached in Annexure-B

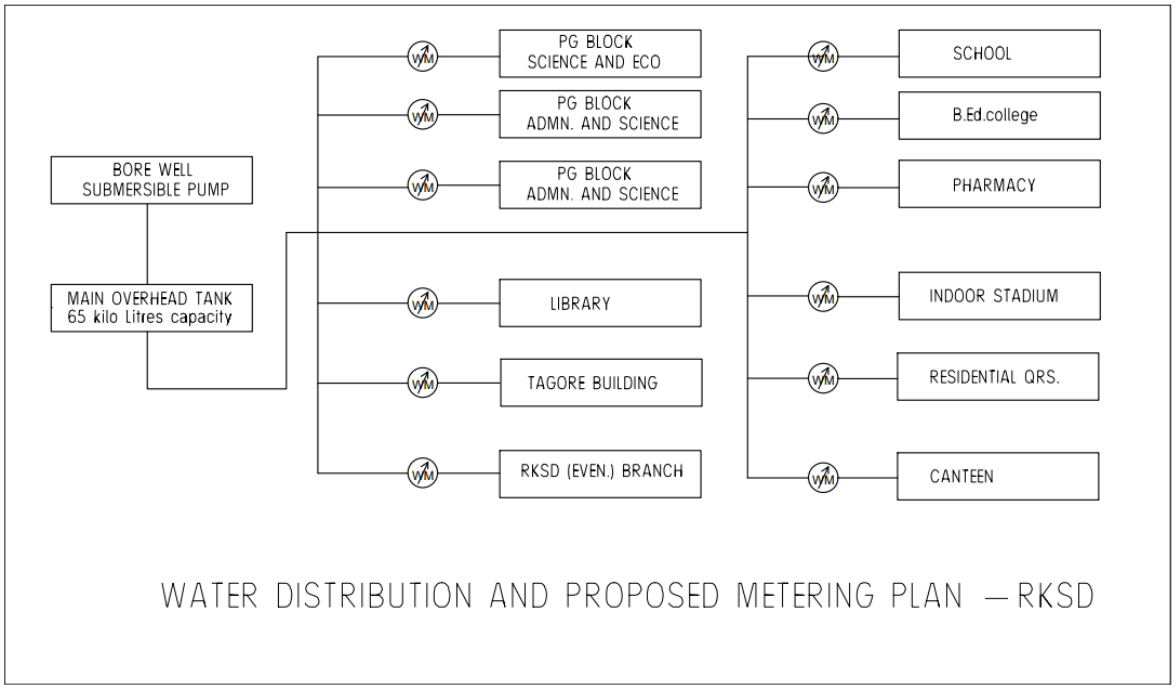
There is ample awareness of management of college campus towards sustainability. Management of college is very instrumental in spearheading movement of sustainable practices in running of college and also facilitating dissemination of these practices to all students studying in this campus. It is through support of management and active involvement of other stake holders and staff members that this college has managed sustainable practices by being proactively initiating suitable actions for the same.

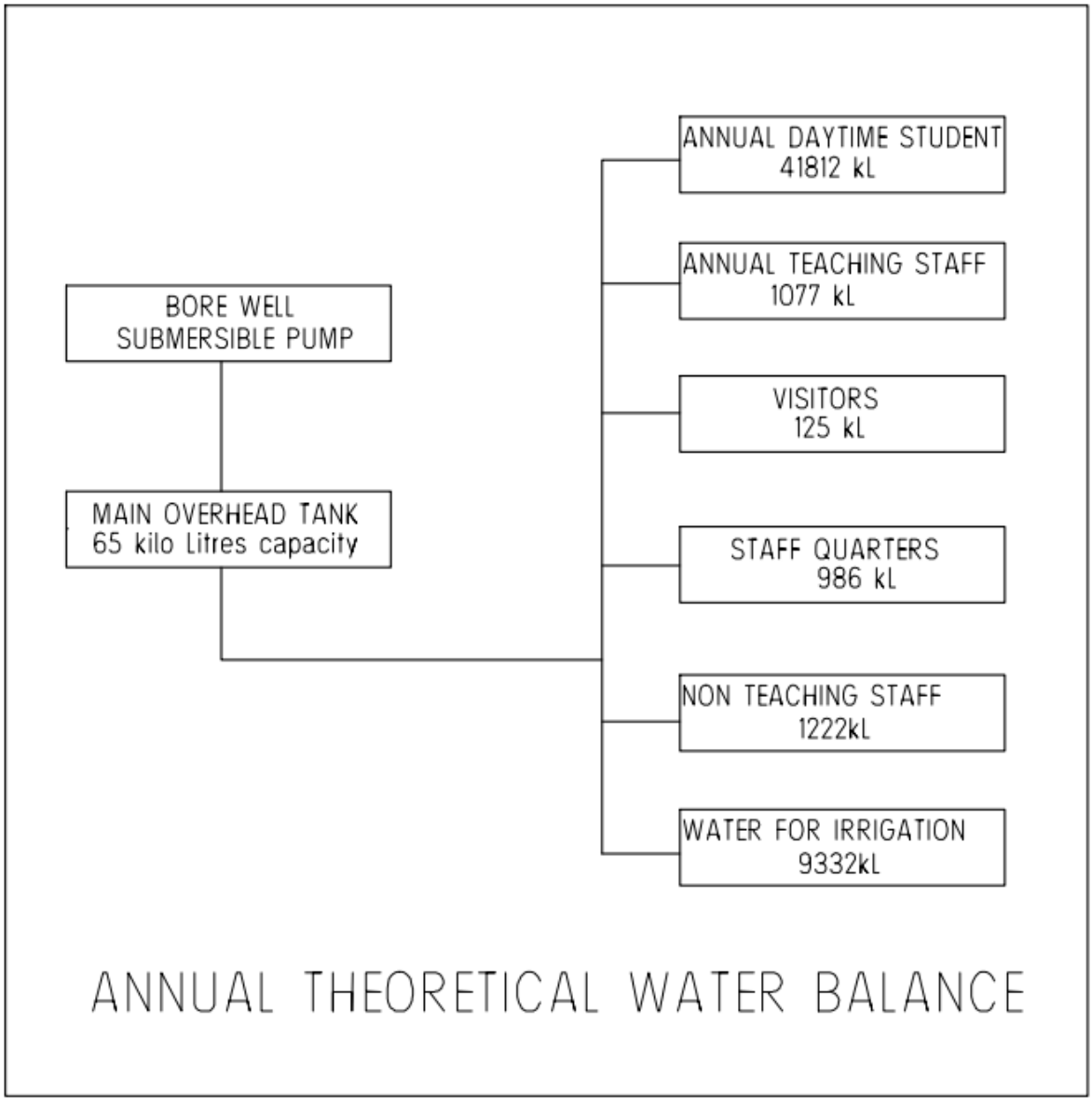
In all matters of resource use, there is effective implementation of 3R's. Reduction of resource use, Recycling of resources and also re-use. It is for attaining objectives of sustainability.

STP is recommended to be installed in campus and treated water should be re-used for reducing extracted water consumption.

During audit, it has been seen that a lot of work for conservation of water has already been taken up. The quality of water extracted should be periodically tested and the result of testing be documented.

Water meters are recommended to be installed at locations as per metering plan.




BORE WELL
SUBMERSIBLE PUMP
MAIN OVERHEAD TANK
65 kilo Litres capacity
ANNUAL DAYTIME STUDENT
41812 kL
ANNUAL TEACHING STAFF
1077 kL
VISITORS
125 kL
STAFF QUARTERS
986 kL
NON TEACHING STAFF
1222kL
WATER FOR IRRIGATION
9332kL
ANNUAL THEORETICAL WATER BALANCE

Water Use Study

FLOW RATE OF INSTALLED FIXTURES MEASURED

	Water Flow Detail in Liters Per minute at R.K.S.D.(P.G.) College, Kaithal						
Sno	**Location**	**Wash Basin**				**Tap**	**Remarks**
1	Zoology Lab	6.35	9.33	24.00			**Flow should be ideally less than 5 Liters per minute. Recommended that all fixture sourced in future should be water efficient fixture**
2	Chemistry Lab - I Room no - 39	5.48	5.81	6.62	3.81		
3	Chemistry Lab - II Room no - 40	8.14	9.26	6.21	6.22		
4	Library Ground Floor Gents Toilet	10.26					
5	Library Ground Floor Ladies Toilet	9.84					
6	Library First Floor Ladies Toilet	10.15					
7	Evening College Principal Room	5.34					
8	Evening College Staff Room Gents Toilet	7.34					
9	Evening College Staff Room Ladies Toilet	6.59	6.80				
10	Evening College Ground Floor Boys Toilet	9.01	8.39				
11	Evening College Ground Floor Girls Toilet	9.13	8.61				
12	Evening College Ground Floor Male Staff Toilet	3.38					
13	Evening College Ground Floor Female Staff Toilet	7.12					
14	Evening College First Floor Boys Toilet	9.76	8.45				
15	Evening College First Floor Girls Toilet	8.82	8.28				
16	Evening College First Floor Male Staff Toilet	4.08					
17	Evening College First Floor Female Staff Toilet	6.59					
18	Evening College Second Floor Boys Toilet	8.82	8.14				
19	Evening College Second Floor Girls Toilet	8.78	8.39				
20	Evening College Second Floor Male Staff Toilet	3.90					
21	Evening College Second Floor Female Staff Toilet	6.86					
22	Canteen	7.69				6.28	
23	Canteen Girls Toilet	7.37					
24	Canteen Boys Toilet	7.73					
25	Principal Room Toilet (Morning)	7.56	7.86				

26	Staff Room Gents Toilet (Morning)	8.33	8.72				
27	Staff Room Ladies Toilet (Morning)	7.89	8.45	8.60			
28	Chairman Office	7.29					
29	Tagore Bhawan Ground Floor Gents Toilet	10.10					
30	Tagore Bhawan Ground Floor Ladies Toilet	8.09					
31	Diamond Jubilee Bhawan English Dept. Room no-409	5.96					
32	B.Ed. Principal Room	22.47					
33	B.Ed. Ground Floor Boys Toilet	8.32					
34	B.Ed. Ground Floor Girls Toilet	8.44					
35	B.Ed. Male Staff Toilet	8.08				5.79	
36	B.Ed. Female Staff Toilet	7.28					
37	Staff Quarter	8.72				5.79	
38	Open New Stage - 1	9.30	10.27				
39	Open New Stage - 2	11.58					

Flow of fixtures is noticed to be higher. These are required to be replaced with efficient low flow plumbing fixtures specially for student toilets. At common places this can be presently managed with installed valves.

Water Quality

Water quality should be got tested from NABL accredited lab and records of tests be maintained.

The following points needs attention and required to be addressed. The saving targets over NBC-2016 requirement should be fixed for next 12 months and practice of recording and reviewing of water use on periodic basis for pointing out any sudden variation is required to be followed.

Observations on water use

S. No.	Issue	Standard	Shortcomings	Recommendations
1	Flow of water in plumbing fixtures	GRIHA/IGBC	Flow is measured is high	All plumbing fixtures be replaced with low flow fixtures whenever these are due for replacement after wear and tear. Till the time the flow should be regulated from valves wherever existing for wash Basin and Sinks.
2	Cisterns installed for flushing	GRIHA/IGBC	Double flow cisterns are installed	Awareness stickers are seen pasted.
3	Rainwater harvesting system	Central Water Ground Water Board	5 Nos. direct re-charge bores are available	These are maintained and functioning effectively. These need to be supplemented with stone filters for improvement of quality fed to ground while re-charging
4	Water Meters	NBC-2016	NO Water Meters are installed	Water Meters be got installed for Individual all individual blocks as per proposed Metering plan in report.
5	Bills and Stickers for water conservation	Best practices	Presently installed at few locations only	The stickers be installed near water use points for conservation of water. Specially in student toilets, these are required to be put.

TURF AREA CHART R.K.S.D (PG) College-Kaithal

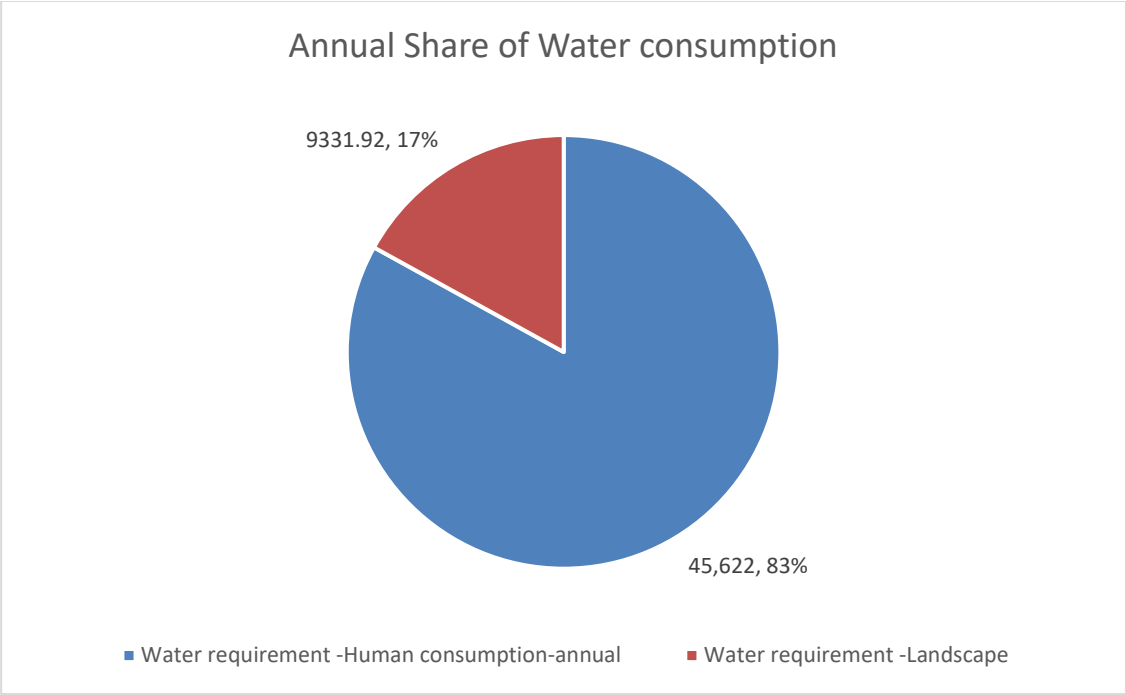
RKSD COLLEGE-KAITHAL-Turf Area			
S. No.	**Park**	**Area in Sq. ft.**	**Area in Sq. mts.**
1	Park-1	1200	111.52
2	Park-2	2250	209.11
3	Park-3	2400	223.05
4	Park-4	3500	325.28
5	Park-5	16300	1514.87
6	Park-6	12900	1198.88
7	From Gate No.1 to Hostel	750	69.70
	Total Area	**39300**	**3652.42**

Theoretical Water Consumption for Landscape

Theoretical Water Consumption for Landscape			
S.No.	Turf Area-Sq.Mts.	Water requirement per day per sq.mts	Annual Water requirement-kL @ 365 days
1	3652.42	7	9331.92

SHARE OF ANNUAL WATER CONSUMPTION

Share of annual water consumption	
Water requirement -Human consumption-annual	45,622
Water requirement -Landscape	9331.92
Total Annual water requirement-Theoretical	54,954.12
Average daily Theoretical consumption-kL	151


Annual Share of Water consumption
9331.92, 17%
45,622, 83%
Water requirement -Human consumption-annual
Water requirement -Landscape

Inventory of Toilets- R.K.S.D (P.G) College-Kaithal

R.K.S.D.(P.G.) College, Kaithal

Details of Toilets

Sr.No.	Toilet No	Office / Block/Department	Toilet Seat				Washbasin		
			Single Flush Button Cistern (in 5 Ltr.)	Double Flush Button Cistern (in 3-5 Ltr.)	with concealed	(EWC / Indian Pan)	Spout	Pillar Cock	Automatic Foot Operated Tap
1	1	Principal Office (Morning)	Nil	1 (wall Hanging)	2	Nil	2	Nil	Nil
2	2	Chairman Office (Morning)	Nil	1 (wall Hanging)	2	Nil	1	Nil	Nil
3	3	Teaching Staff Room Female (Morning)	2 (wall Hanging)	Nil	2	I (Indian)	3	Nil	Nil
4	4	Teaching Staff Room Male (Morning)	1 (wall Hanging)	Nil	1	1	2	Nil	Nil
5	5	Science Block (Female)	Nil	1	1	EWC (I Pcs)	Nil	1	1
6	6	Science Block (Male)	Nil	1	1	EWC (I Pcs)	Nil	1	1
7	7	Administrative Office	1	Nil	1	EWC	Nil	1	Nil
8	8	Guest Room	1	Nil	2	EWC	Nil	1	Nil
9	9	Girls Common Room	3	NIL	1	EWC (1) Indian (2)	Nil	2	Nil
10	10	Conference Room	2	Nil	2	EWC (2	Nil	1	Nil
11	11	Library (Ground Floor) Male	Nil	1	1	EWC (I Pcs)	Nil	1	Nil
12	12	Library (Ground Floor) Female	Nil	3	Nil	EWC (3 Pcs)	Nil	1	Nil

Sr.No.	Toilet No	Office / Block/Department	Toilet Seat				Washbasin		
			Single Flush Button Cistern (in 5 Ltr.)	Double Flush Button Cistern (in 3-5 Ltr.)	with concealed	(EWC / Indian Pan)	Spout	Piller Cock	Automatic Foot Operated Tap
13	13	Library (First Floor)	Nil	Nil	Nil	Nil	Nil	1	Nil
14	14	Pol. Sc Dept.	1	Nil	1	EWC	Nil	Nil	1
15	15	English Dept.	1	Nil	1	EWC	Nil	1	Nil
16	16	Hindi Dept.	1	Nil	1	EWC	Nil	1	Nil
17	17	Math Dept.	1	Nil	1	EWC	Nil	1	Nil
18	18	Tagore Bhawan Ground Floor (Female)	2	Nil	4	EWC	Nil	1	Nil
19	19	Tagore Bhawan (Ground Floor) Male	5	Nil	2	EWC (2) Indian (3)	Nil	1	Nil
20	20	Tagore Bhawan (First Floor)	5	Nil	2	EWC (2) Indian (3)	Nil	1	Nil
21	21	Staff Quarter - 1	1	Nil	Nil	EWC	Nil	1	Nil
22	22	Staff Quarter - 2	1	Nil	2	EWC	Nil	1	Nil
23	23	Staff Quarter - 3	1	Nil	2	EWC	Nil	1	Nil
24	24	Student Washroom (New)	Nil	Nil	1	Nil	Nil	2	Nil
25	25	Ground Washroom	2	Nil	Nil	Indian (2)	Nil	2	Nil
26	26	Café washroom 1	Nil	1 (wall Hanging)	1	Nil	Nil	1	Nil
27	27	Café washroom 2	Nil	1 (wall Hanging)	1	Nil	Nil	1	Nil

Sr. No.	Toilet No	Office / Block/Department	Toilet Seat				Washbasin		
			Single Flush Button Cistern (in 5 Ltr.)	Double Flush Button Cistern (in 3-5 Ltr.)	with concealed	(EWC / Indian Pan)	Spout	Piller Cock	Automatic Foot Operated Tap
28	28	Open Stage (New)-1	Nil	2 (wall Hanging)	2	Nil	Nil	3	Nil
29	29	Open Stage (New)-2	Nil	1 (wall Hanging)	1	Nil	Nil	1	Nil
30	30	Principal Office (Evening)	Nil	1 (wall Hanging)	Nil	Nil	Nil	1	Nil
31	31	Chairman Office (Evening)	Nil	1 (wall Hanging)	2	Nil	1	Nil	Nil
32	32	Teaching Staff Room (Evening) Ground Floor	1	Nil	Nil	EWC	Nil	1	Nil
33	33	Female (Evening) Ground Floor	4	Nil	Nil	EWC	Nil	2	Nil
34	34	Staff Washroom (Evening) First Floor	1	Nil	Nil	EWC	Nil	1	Nil
35	35	Female (Evening) First Floor	4	Nil	Nil	EWC	Nil	2	Nil
36	36	Staff Washroom (Evening) Second Floor	1	Nil	Nil	EWC	Nil	1	Nil
37	37	Female (Evening) Second Floor	4	Nil	Nil	EWC	Nil	2	Nil
38	38	Boys (Evening) Ground Floor	2	Nil	Nil	EWC	Nil	2	Nil
39	39	Boys (Evening) First Floor	1	Nil	Nil	EWC	Nil	2	Nil
40	40	Boys (Evening) Second Floor	1	Nil	Nil	EWC	Nil	2	Nil
41	41	Principal Office (B.Ed.)	1	Nil	1	EWC	Nil	1	Nil
42	42	Teaching Staff Room (B.Ed.) Male	1	Nil	1	EWC	Nil	1	Nil
43	43	Teaching Staff Room (B.Ed.) Female	1	Nil	2	EWC	Nil	1	Nil

Sr.No.	Toilet No	Office / Block/Department	Toilet Seat				Washbasin		
			Single Flush Button Cistern (in 5 Ltr.)	Double Flush Button Cistern (in 3-5 Ltr.)	with concealed	(EWC / Indian Pan)	Spout	Piller Cock	Automatic Foot Operated Tap
44	44	Female (B.Ed.)	3	Nil	1	EWC (2) Indian (1)	Nil	1	Nil
45	45	Boys (B.Ed.)	1	Nil	1	EWC	Nil	1	Nil
46	46	Indoor Stadium (Girls) Ground Floor	3	Nil	3	EWC	Nil	1	Nil
47	47	Indoor Stadium (Boys) Ground Floor	2	Nil	2	EWC	Nil	1	nil
48	48	Indoor Stadium (Staff) First Floor	Nil	1	Nil	EWC	Nil	1	Nil
49	49	Indoor Stadium (Boys) First Floor	Nil	1	Nil	EWC	Nil	1	Nil
50	50	Indoor Stadium (Boys) Second Floor	3	Nil	3	EWC	Nil	2	Nil

R.K.S.D.(P.G.) College, Kaithal

Details of Toilets

Sr. No.	Toilet No	Office / Block/Department	Urinal		Tap			Water Tank	Exhaust Fan
			Sensor	Push Cock	Angel Cock	Long Nose	Bib Cock		
1	1	Principal Office (Morning)	1	Nil	1	Nil	Nil	yes	yes
2	2	Chairman Office (Morning)	1	Nil	1	Nil	Nil	yes	yes
3	3	Teaching Staff Room Female (Morning)	Nil	Nil	5	3	Nil	yes	yes
4	4	Teaching Staff Room Male (Morning)	Nil	2	4	1	Nil	yes	yes
5	5	Science Block (Female)	Nil	Nil	3	Nil	Nil	yes	yes
6	6	Science Block (Male)	Nil	1	4	Nil	Nil	yes	yes
7	7	Administrative Office	Nil	1	3	Nil	1	yes	yes
8	8	Guest Room	Nil	Nil	4	3	1	yes	No
9	9	Girls Common Room	Nil	Nil	5	Nil	4	yes	No
10	10	Conference Room	Nil	Nil	3	2	2	yes	yes
11	11	Library (Ground Floor) Male	Nil	3	6	9	1	yes	yes
12	12	Library (Ground Floor) Female	Nil	Nil	7	Nil	2	yes	yes
13	13	Library (First Floor)	Nil	2	3	Nil	Nil	yes	yes

Sr.No.	Toilet No	Office / Block/Department	Urinal		Taps			Water Tank	Exhaust Fan
			Sensor	Push Cock	Angel Cock	Long Nose	Bib Cock		
14	14	Pol. Sc Dept.	Nil	1	2	Nil	Nil	yes	yes
15	15	English Dept.	Nil	Nil	2	Nil	Nil	yes	yes
16	16	Hindi Dept.	Nil	Nil	2	Nil	Nil	yes	yes
17	17	Math Dept.	Nil	Nil	2	Nil	Nil	yes	yes
18	18	Tagore Bhawan Ground Floor Female	Nil	Nil	3	2	Nil	yes	yes
19	19	Tagore Bhawan (Ground Floor) Male	Nil	Nil	6	Nil	5	yes	yes
20	20	Tagore Bhawan (First Floor)	Nil	3	6	Nil	2	Yes	No
21	21	Staff Quarter - 1	Nil	Nil	2	2	2	Yes	No
22	22	Staff Quarter - 2	Nil	Nil	3	3	1	Yes	No
23	23	Staff Quarter - 3	Nil	Nil	3	3	1	Yes	No
24	24	Student Washroom (New)	Nil	5	5	Nil	Nil	yes	No
25	25	Ground Washroom	Nil	Nil	2	Nil	Nil	Yes	No
26	26	Café washroom 1	Nil	Nil	2	Nil	1	yes	No
27	27	Café washroom 2	Nil	Nil	2	Nil	1	yes	No
28	28	Open Stage (New)-1	Nil	Nil	4	2	Nil	yes	No
29	29	Open Stage (New)-2	Nil	Nil	2	1	Nil	yes	No

Sr.No.	Toilet No	Office / Block/Department	Urinal		Taps			Water Tank	Exhaust Fan
			Sensor	Push Cock	Angel Cock	Long Nose	Bib Cock		
30	30	Principal Office (Evening)	Nil	1	4	Nil	Nil	yes	No
31	31	Chairman Office (Evening)	1	Nil	1	Nil	1	yes	No
32	32	Teaching Staff Room (Evening) Ground Floor	Nil	1	3	Nil	1	yes	No
33	33	Female (Evening) Ground Floor	Nil	Nil	10	Nil	4	yes	No
34	34	Staff Washroom (Evening) First Floor	Nil	1	3	Nil	1	yes	No
35	35	Female (Evening) First Floor	Nil	Nil	10	Nil	4	yes	No
36	36	Staff Washroom (Evening) Second Floor	Nil	1	3	Nil	1	yes	No
37	37	Female (Evening) Second Floor	Nil	Nil	10	Nil	1	yes	No
38	38	Boys (Evening) Ground Floor	Nil	2	6	Nil	2	yes	No
39	39	Boys (Evening) First Floor	Nil	2	4	Nil	1	yes	No
40	40	Boys (Evening) Second Floor	Nil	3	4	Nil	1	yes	No
41	41	Principal Office (B.Ed.)	Nil	2	2	Nil	1	yes	YES
42	42	Teaching Staff Room (B.Ed.) Male	Nil	1	3	Nil	Nil	yes	yes
43	43	Teaching Staff Room (B.Ed.) Female	Nil	Nil	1	Nil	2	yes	yes
44	44	Female (B.Ed.)	Nil	3	4	Nil	Nil	yes	yes
45	45	Boys (B.Ed.)	Nil	4	7	Nil	Nil	yes	yes
46	46	Indoor Stadium (Girls) Ground Floor	Nil	Nil	4	Nil	3	yes	no
47	47	Indoor Stadium (Boys) Ground Floor	Nil	2	5	Nil	2	yes	No
48	48	Indoor Stadium (Staff) First Floor	Nil	Nil	3	1	Nil	yes	No
49	49	Indoor Stadium (Boys) First Floor	Nil	Nil	Nil	2	Nil	yes	No
50	50	Indoor Stadium (Boys) Second Floor	Nil	2	7	Nil	Nil	Yes	No

Rainwater harvesting system-Water direct Recharge through bore

Three are 5 nos. of Rainwater harvesting system pits have been installed. No water filtration through stone filters have been installed. It is recommended to provide filtration arrangement for water being charged into ground for maintaining high quality of ground water and avoiding any ground water contamination.

Additionally, water from outside. Storm water at main road is also channelled to ground area and is recharged to ground.

List of Recharge pits

1. Stadium -1 No.
2. Main Ground-3 nos.
3. Tagore bhavan-1 no.

Auditing for Energy Management

Energy cannot be seen, but we know it is there because we can see its effects in the forms of heat, light and power. This indicator addresses energy consumption, energy sources, energy monitoring, lighting, appliances, and vehicles. Energy use is clearly an important aspect of campus sustainability and thus requires no explanation for its inclusion in the assessment. An old incandescent bulb uses approximately 60W to 100W while an energy efficient light emitting diode (LED) uses only less than 10 W. Energy auditing deals with the conservation and methods to reduce its consumption related to environmental degradation. It is therefore essential that any environmentally responsible institution examine its energy use practices. **LED use also has a peculiar advantage for environment that LEDs are not using any** Mercury **as in the case of CFL's or Fluorescent tubes.**

Energy use and Energy performance Index

EPI Calculation-March -21 toFebruary-22

Energy Performance Index

EPI Calculation-April-19 to March-20 -Pre Covid- Grid Electricity

Total Built up Area 7401 Sq. mts.
Total Annual Units consumed: 1,00,648
Overall EPI: 13.59 kWh per sq. Mts.

It is recommended that EPI be monitored on month-to-month basis.
Similar month of year is required to be compared with previous year.
Covid data variation should be considered while judging performance.

RENEWABLE ENERGY

There are solar photovoltaic plants installed at roof top totalling to 86 kWp.The generation as per actual is required to be monitored. Actual generation is lower than target generation as depicted below.

There is a potential of addition to the extent of 50 kWp.

Recommendation: The follow up for maintenance of installed solar PV plant be made effective to avoid any irrecoverable loss of generation through renewable means.

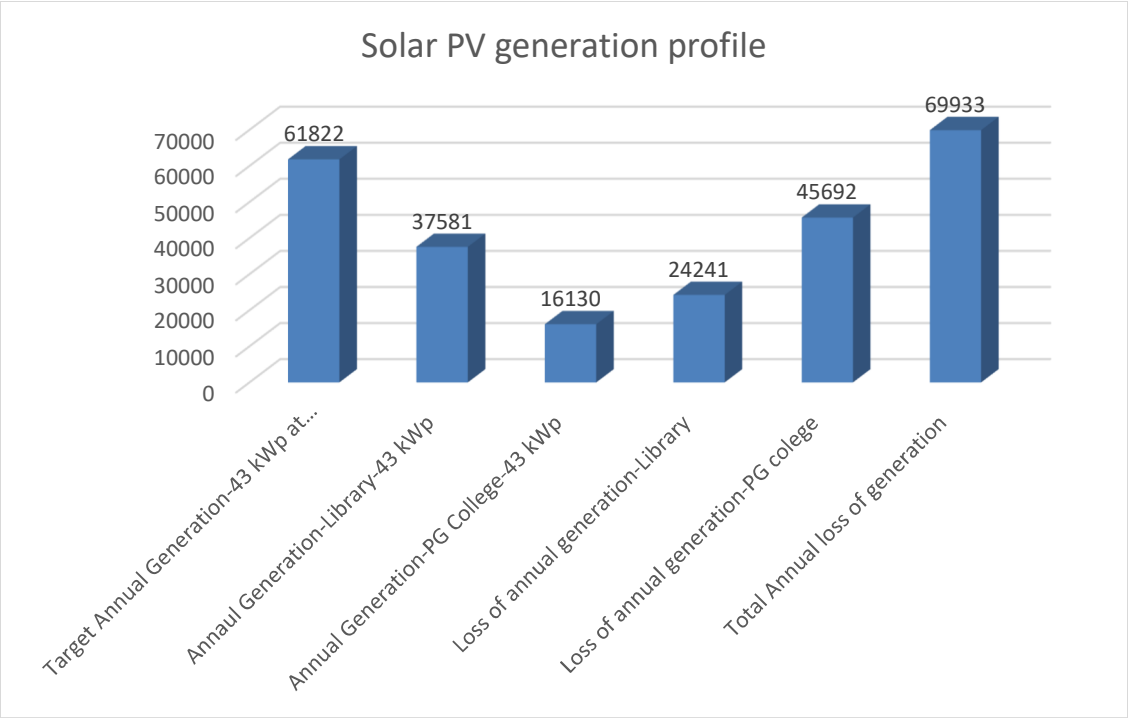
Installed system

1. PG college-43 kWp
2. Library -43 kWp
3. Annual units generated -Library – 37581 kWh
4. Annual units generated -P.G. College—16130.

Observations

1. Direction of one of solar PV plant is off from recommended south direction. In future care should be taken to install the solar PV facing south and tilt angle should be close to the latitude of the place.

Descriptions	**Units in kWh**
Target Annual Generation-43 kWp at Kaithal	61822
Annual Generation-Library-43 kWp	37581
Annual Generation-PG College-43 kWp	16130
Loss of annual generation-Library	24241
Loss of annual generation-PG college	45692
Total Annual loss of generation	69933
Annual Financial loss @ Rs.7.00 per unit	489,531.00


Solar PV generation profile
70000
60000
50000
40000
30000
20000
10000
0
61822
37581
16130
24241
45692
69933
Target Annual Generation-43 kWp at...
Annaul Generation-Library-43 kWp
Annual Generation-PG College-43 kWp
Loss of annual generation-Library
Loss of annual generation-PG colege
Total Annual loss of generation

My Location | *Kaithal* » Change Location | English Español | HELP | FEEDBACK

RESOURCE DATA | SYSTEM INFO | RESULTS

SOLAR RESOURCE DATA

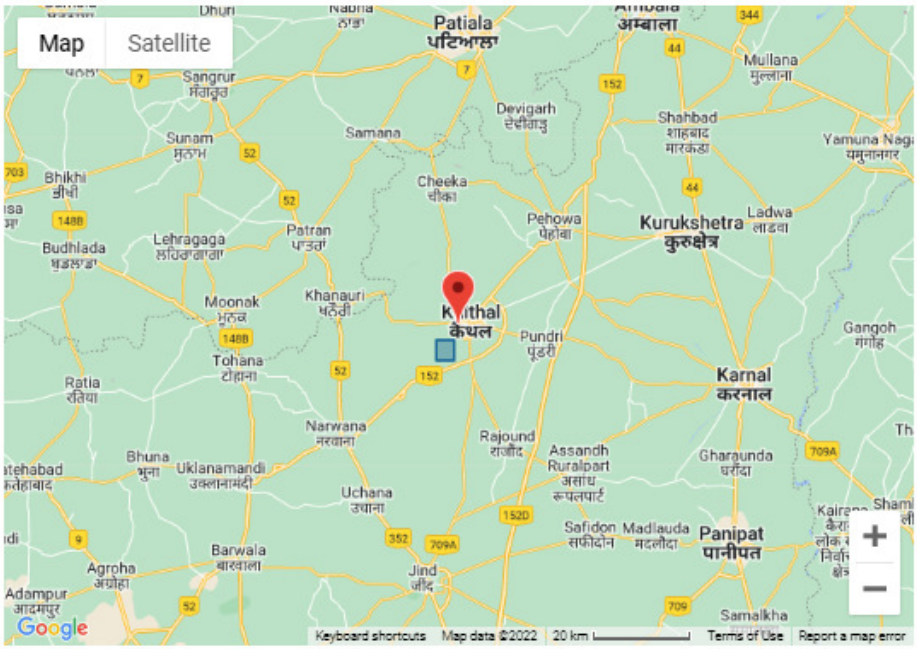
The latitude and longitude of the solar resource data site is shown below, along with the distance between your location and the center of the site grid cell. Use this data unless you have a reason to change it.

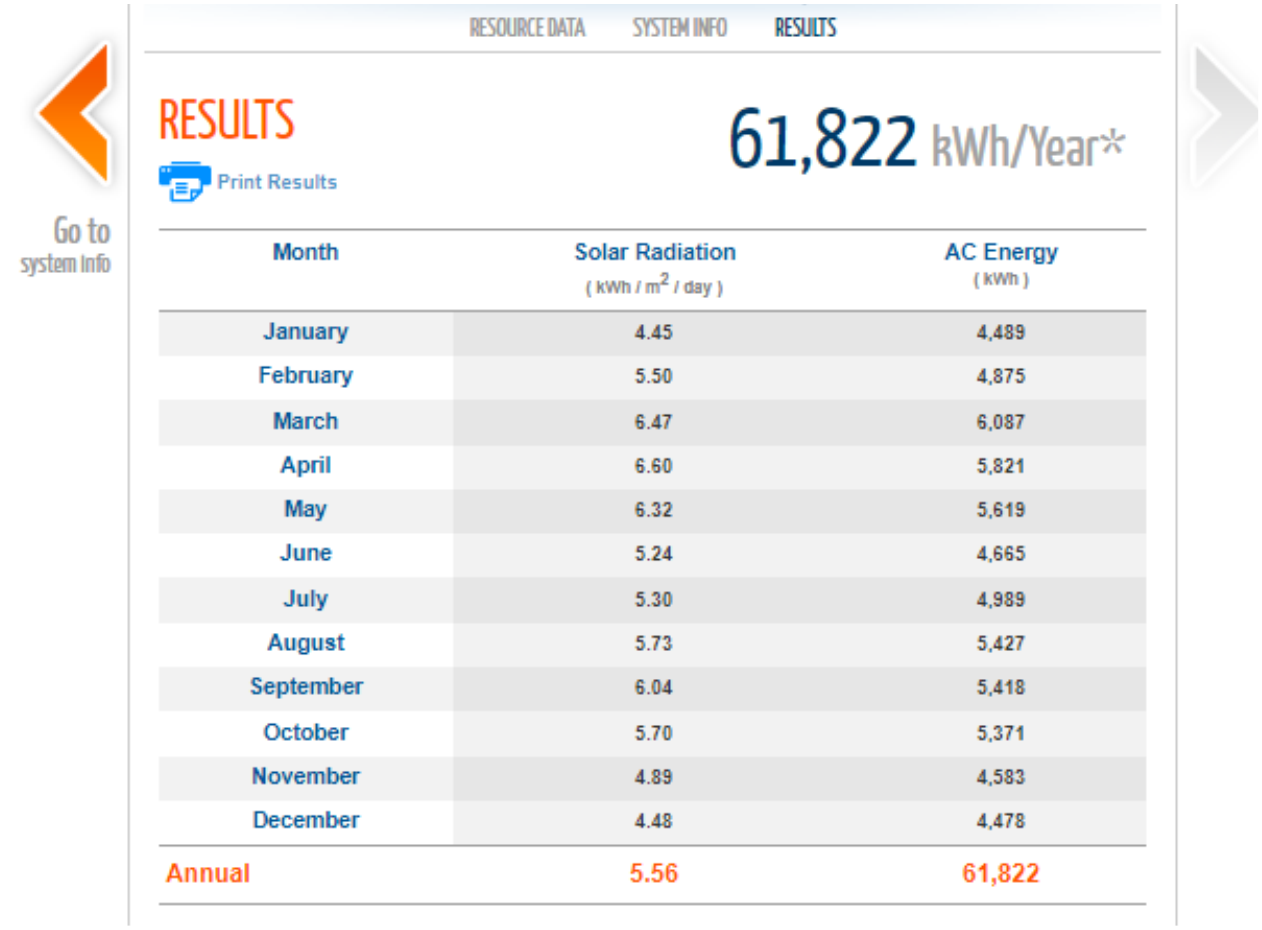
Solar resource data site: **Lat, Lng: 29.75, 76.35** — **3.7 mi**

Go to system info

Resource Data Map

The blue rectangle on the map indicates the NREL National Solar Radiation Database (NSRDB) grid cell for your location. If you want to use data for a different NSRDB grid cell, double-click the map to move the rectangle. *Dragging the rectangle will not move it.*
If your location is outside the NSRDB area, the map shows pins for the nearest alternate data sites instead of a rectangle: Click a pin to choose the site you want to use.
See Help for details.





RESOURCE DATA SYSTEM INFO RESULTS

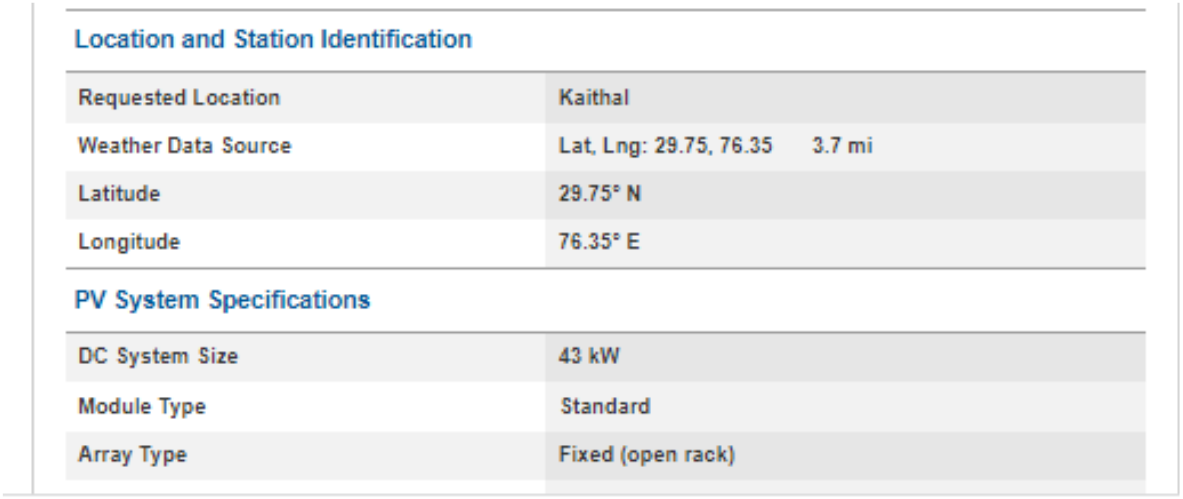
Go to system info

RESULTS

Print Results

61,822 kWh/Year*

Month	Solar Radiation (kWh / m^2 / day)	AC Energy (kWh)
January	4.45	4,489
February	5.50	4,875
March	6.47	6,087
April	6.60	5,821
May	6.32	5,619
June	5.24	4,665
July	5.30	4,989
August	5.73	5,427
September	6.04	5,418
October	5.70	5,371
November	4.89	4,583
December	4.48	4,478
Annual	5.56	61,822



Location and Station Identification	
Requested Location	Kaithal
Weather Data Source	Lat, Lng: 29.75, 76.35 3.7 mi
Latitude	29.75° N
Longitude	76.35° E
PV System Specifications	
DC System Size	43 kW
Module Type	Standard
Array Type	Fixed (open rack)

The generation through solar PV is lower than target generation and is required to be monitored.

Waste Management Policy

POLICY DOCUMENT

ON

'WASTE MANAGEMENT'

RKSD (PG) COLLEGE, KAITHAL

NAAC 'A' Grade accredited, Affiliated to Kurukshetra University, Kurukshetra

Ambala Road, Kaithal -136027 (Haryana)

RKSD (PG) COLLEGE, KAITHAL

- The College recognises the need for protection of natural environment and incorporates it as an integral part of good institutional practices. To achieve this college shall develop, implement, and sustain an environment management system of which waste management system is essential constituent.
- The College will adopt the principles of best environmental practices as reasonably implementable in the delivery of waste management services and ecological initiatives.
- The College will implement waste hierarchal approach to reduce, recycle, reuse and recover waste products to manage its waste responsibility, reduce the volume of waste sent to landfill and maximise use of recycle and reuse where possible.
- The College recognises the importance of compliance of waste management rules and regulations as laid down by the Government.
- The College requires that all the students, employees and all other making use of the premises comply with the waste management objectives set in the policy and ensure compliance with statutory guidelines.
- The action plan shall include but not limited to waste avoidance and minimisation, segregation of waste at source, reuse, and recycling. The policy includes solid waste, E-waste, hazardous waste and bio-medical waste or any other waste generated.
- The College also commits to be totally plastic free campus.
- This policy shall be reviewed annually or as per requirement.
- The policy shall be communicated to all stake holders.

Dr. Sanjay K. Goyal
Principal

Auditing for Waste Management

Pollution from waste is aesthetically unpleasing and results in large amounts of litter in our communities which can cause health problems. Plastic bags and discarded ropes and strings can be very dangerous to birds and other animals.

This indicator addresses waste production and disposal, plastic waste, paper waste, food waste, and recycling Solid waste can be divided into two categories:

General waste and hazardous waste. General wastes include what is usually thrown away in colleges such as garbage, paper, tins and glass bottles. Hazardous waste is waste that is likely to be a threat to health or the environment like cleaning chemicals and petrol. Unscientific landfills may contain harmful contaminants that leach into soil and water supplies and produce greenhouse gases contributing to global climate change.

Furthermore, solid waste often includes wasted material resources that could otherwise be channelled into better service through recycling, repair, and reuse. Thus, the minimization of solid waste is essential to a sustainable campus. The auditor diagnoses the prevailing waste disposal policies and suggests the best way to combat the problems. It is therefore essential that any environmentally responsible institution examine its waste processing practices.

Solid waste: Paper is collected and disposed of through sale to recyclers. 620 Kilograms of wastepaper has been sold for re cycling that was collected in a period of two years

E-Waste: The old computers are sold back to vendor which is again put to beneficial use by repairing and it is good sustainable practice. Material not reusable is re cycled as per extant guidelines.

Keyboards and mouse which become un-serviceable are also disposed of. It is required to be ensured that vendor dealing with E-waste is authorised to collect E-waste.

Hazardous Waste: Lead Acid Cell Batteries are returned to Vendors for re-cycling of lead and other constituents.

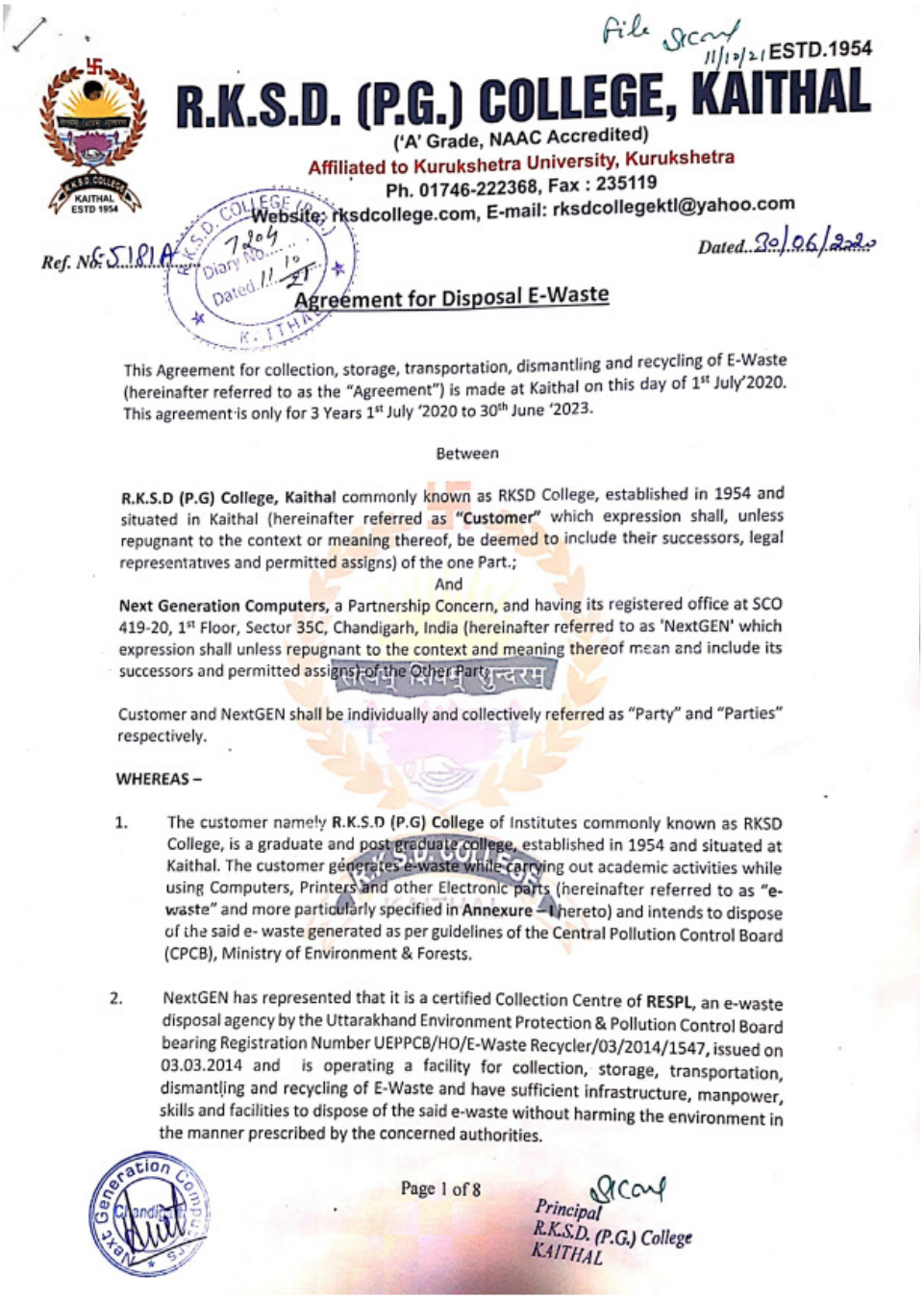
Fluorescent tubes are handed over to Junk dealer who in turn should send them to Local re-cycling units. Storage of Fluorescent tubes in college should be as per recommended practice.

WASTE- Types of waste generated in campus

- E-waste-Yes-Handled as per extant guidelines and rules. E-waste is handed over to authorised re-cycler- next Generation, Chandigarh. Copy of MOU is attached here with.

E-Waste disposal

Copy of MOU for E-waste disposal



File Scan 11/12/21

ESTD.1954

R.K.S.D. (P.G.) COLLEGE, KAITHAL

('A' Grade, NAAC Accredited)

Affiliated to Kurukshetra University, Kurukshetra

Ph. 01746-222368, Fax : 235119

Website: rksdcollege.com, E-mail: rksdcollegektl@yahoo.com

Ref. No. 5181A

R.K.S.D. COLLEGE (P.G.) Diary No. 7204 Dated 11.10.21 KAITHAL

Dated 30/06/2020

Agreement for Disposal E-Waste

This Agreement for collection, storage, transportation, dismantling and recycling of E-Waste (hereinafter referred to as the "Agreement") is made at Kaithal on this day of 1st July'2020. This agreement is only for 3 Years 1st July '2020 to 30th June '2023.

Between

R.K.S.D (P.G) College, Kaithal commonly known as RKSD College, established in 1954 and situated in Kaithal (hereinafter referred as **"Customer"** which expression shall, unless repugnant to the context or meaning thereof, be deemed to include their successors, legal representatives and permitted assigns) of the one Part.;

And

Next Generation Computers, a Partnership Concern, and having its registered office at SCO 419-20, 1st Floor, Sector 35C, Chandigarh, India (hereinafter referred to as 'NextGEN' which expression shall unless repugnant to the context and meaning thereof mean and include its successors and permitted assigns) of the Other Party.

Customer and NextGEN shall be individually and collectively referred as "Party" and "Parties" respectively.

WHEREAS –

1. The customer namely **R.K.S.D (P.G) College** of Institutes commonly known as RKSD College, is a graduate and post graduate college, established in 1954 and situated at Kaithal. The customer generates e-waste while carrying out academic activities while using Computers, Printers and other Electronic parts (hereinafter referred to as **"e-waste"** and more particularly specified in **Annexure – I** hereto) and intends to dispose of the said e- waste generated as per guidelines of the Central Pollution Control Board (CPCB), Ministry of Environment & Forests.

2. NextGEN has represented that it is a certified Collection Centre of **RESPL**, an e-waste disposal agency by the Uttarakhand Environment Protection & Pollution Control Board bearing Registration Number UEPPCB/HO/E-Waste Recycler/03/2014/1547, issued on 03.03.2014 and is operating a facility for collection, storage, transportation, dismantling and recycling of E-Waste and have sufficient infrastructure, manpower, skills and facilities to dispose of the said e-waste without harming the environment in the manner prescribed by the concerned authorities.

Next Generation Computers Chandigarh

Page 1 of 8

Scan

Principal
R.K.S.D. (P.G.) College
KAITHAL

The record of use and handling of E-waste is maintained, while disposing/Auction or sale of E-waste credential of purchaser is documented, and vendor is authorised for collection and ensuring re cycling of E-waste as per extant guidelines.

- **Hazardous waste (toxic)-yes**

  For safe handling and management of hazardous waste in an environmentally sound manner, Govt. of India has notified the Hazardous Waste (Management & Handling) Rules, 1989, under the Environment (Protection) Act, 1986. However, these Rules were suppressed with re notification of the Hazardous Wastes (Management, Handling and Trans boundary Movement) Rules, 2008. Under the said Rules, hazardous waste has been defined as those wastes which by reason of any of its physical, chemical, reactive, toxic, flammable, explosive or corrosive characteristics causes danger or is likely to cause danger to health or environment, whether alone or when in contact with other wastes or substances and shall include wastes as specified in Schedules of the Rules.

- Solid waste-yes-Extra waste removed and disposed in municipal waste collection points
- Dry leaves-Yes-Used in college for making manure/compost
- Canteen waste-yes-Used for Compost in college
- Liquid waste-No
- Glass-No-Recommended for separate storage.
- Unused equipment-yes-Returned to vendors through sale
- Plastic waste-Yes-Segregated and removed

Canteen Waste-Handling practice

1. Food Waste – Signages are required to be put in cafeteria, canteen etc. for avoiding food wastage.

Zero Food wastage week should be planned once in every semester for sensitization was celebrated in College in April-2022.

Auditing for Green Campus Management

Unfortunately, biodiversity is facing serious threats from habitat loss, pollution, over consumption and invasive species. Species are disappearing at an alarming rate and each loss affects nature's delicate balance and our quality of life. Without this variability in the living world, ecological systems and functions would break down, with detrimental consequences for all forms of life, including human beings. Newly planted and existing trees decrease the amount of carbon dioxide in the atmosphere. Trees play an important ecological role within the urban environment, as well as support improved public health and provide aesthetic benefits to cities. In one year, a single mature tree will absorb up to 48 pounds of carbon dioxide from the atmosphere and release it as oxygen. The amount of oxygen that a single tree produces is enough to provide one day's supply of oxygen for people. So, while you are busy studying and working on earning those good grades, all the trees on campus are also working hard to make the air cleaner for us. Trees on our campus impact our mental health as well; studies have shown that trees greatly reduce stress, which a huge deal is considering many students are under some amount of stress.

Health Audit:

1. There is no regular medical officer in medical centre in college.
2. There is no specific environment related disease noticed in students or faculty members arising out of their presence in college campus.

   There is an arrangement with local hospital for treatment of students and staff in case of any requirement.

Noise Pollution

1. Sounds of Normal Conversations:
Sound Intensity: 40-60 dB
Health Hazard: Sound less than 80 dB is safe for the ear.

2. Sounds emanating from Tape recorders or an Orchestra:
Sound Intensity: 70 dB
Health Hazard: It is safe for ear.

3. Sounds of Heavy Traffic:
Sound Intensity: 90 dB
Health Hazard: Constant exposure to sound greater than 80 dB causes temporary hearing loss and if they are not treated immediately, causes permanent impairment.

4. Sounds of Pneumatic drills and other machines:
Sound Intensity: 100 dB
Health Hazard: Constant exposure causes temporary hearing loss and if they are not treated immediately, causes permanent impairment.

5. Sounds of Aircraft engine:
Sound Intensity: 100-200 dB
Health Hazard: Higher noise level of 160 dB cause total deafness, rupturing eardrums, damaging inner ear. It also causes high blood pressure, ulcer in stomach, palpitation, nervous problems, irritation, anger, and affects pregnant women's embryo.

6. Sounds of Rockets during Take-off:
Sound Intensity: 200 dB
Health Hazard: It is dangerously causing total deafness by rupturing the eardrums and damaging the inner ear. It also causes high blood pressure, ulcer in stomach, palpitation, nervous problems, irritation, anger, and affects pregnant women's embryo.

Decibel measurement

DECIBLE MEASUREMENT - R.K.S.D.(P.G.) College, Kaithal			
Sno	**Location**	**Decibel**	**Remarks**
1	Zoology Department	60	Satisfactory
3	Chemistry Lab - I Room no - 39	68.2	Satisfactory
4	Chemistry Lab Chemical Storeroom no - 40	60.4	Satisfactory
5	Physics Lab - II Room no - 42	62.3	Satisfactory
6	Computer Lab - III Room no - 53	52.7	Satisfactory
7	Corridor First Floor	72.2	Satisfactory
8	Electronics Lab - II Room no - 28	68.3	Satisfactory
9	Classroom no - 3	71.7	Satisfactory
10	Classroom no - 14	71.1	Satisfactory
11	Library	48.2	Satisfactory
12	Reading Room	51.7	Satisfactory
13	Outside Ground opposite Canteen	88.8	Satisfactory
14	Evening College Classroom - 307	58.6	Satisfactory
15	Evening College Staff Room	56.4	Satisfactory
16	Evening College Principal Room	50.8	Satisfactory
17	Evening College MP Hall	50	Satisfactory
18	Evening College Computer Lab	49.4	Satisfactory
19	Evening College Corridor	76.1	Satisfactory
20	Canteen	93.4	Satisfactory
21	Principal Room	50.1	Satisfactory
22	Admin. Office	52.4	Satisfactory
23	Chairman Office	49.2	Satisfactory
24	Tagore Bhawan Classroom no-111	62.7	Satisfactory
25	Tagore Bhawan Classroom no-118	63.2	Satisfactory
26	Diamond Jubilee Bhawan Classroom no-406	60.9	Satisfactory
27	Diamond Jubilee Bhawan Classroom no-418	61.7	Satisfactory
28	B.Ed. Principal Room	51.6	Satisfactory
29	B.Ed. Classroom no-203	50.4	Satisfactory

Sound/Decibel level measured is satisfactory and there is no adverse impact of the same on occupants.

NBC-2016 standards of exposure to sound level are annexed as per Annexure-J

TRANSPORTATION PRACTICES

Observation and Recommendation

1. The R.K.S.D (P.G) College-Kaithal is located on National highway and public transport for interstate travel is available from nearby locations, thus saving additional fuel.

2. The staff is encouraged for pooling of vehicles wherever practicable.

PROCUREMENT PRACTICES TO BE FOLLOWED

Procurement team is required to be made aware regarding procurement of goods and services that are sustainable. The sensitization is required for all purchases in a way that optimized utilisation of natural resources is possible.

1 Paper with Recycle content

2. AC's using refrigerant with Zero ODP Refrigerant

3. Environment friendly Housekeeping Chemicals

4. Paints, Adhesives, sealants with recommended percentage of volatile organic compound.

Management of paper use and policy goals

POLICY DOCUMENT

ON

'Commitment towards Paper use and Printing Goals'

RKSD (PG) COLLEGE, KAITHAL

NAAC 'A' Grade accredited, Affiliated to Kurukshetra University, Kurukshetra

Ambala Road, Kaithal -136027 (Haryana)

RKSD (PG) COLLEGE, KAITHAL

Commitment towards Paper use and Printing Goals

- Purchase paper with re-cycled content.
- Distribute memos, reports, purchase orders and brochures electronically.
- Encourage re-use of scrap paper for printing and note taking.
- Print on letterhead paper only as needed; use electronic letterhead whenever possible
- Network all printing to shared copiers/printers and eliminate stand-alone printers where possible
- Discourage reckless printing and copying by requiring use of an account/password
- Promote a 'Think before you Print' culture
- Desktop drafting and editing of documents
- Reduce default margin settings
- Use toner-saving fonts (e g. Eco Font) or smaller-sized fonts
- Single-spaced formatting on all documents - Include the "think before you print" message in the "green" PR Campaign
- Encourage increased use of Blackboard/white board as a paper-free resource
- Training and Adherence - Distribute (an) email(s) with detailed instructions, including "screen shots" on how to change settings on computers, copiers, faxes, printers
- Establish duplex (two-sided) copying and printing as standard
- Phase out meeting handouts and distribute/project them electronically
- Digitize forms and administrative processes. Continue replacing processes and administration eliminating use of paper to the possible extent.
- Double-sided student assignments as standard (with electronic submission, grading & return)
- Faxes: phase out fax machines, utilize computer faxing, end use of fax cover pages
- Increase electronic archiving and record keeping (this needs to be better defined and targets identified; work with Purchasing, Personnel, Academic Department and/or Student Records to be determined)

Dr. Sanjay K. Goyal
Principal

Management of use of paper

Paper use and printing goals of R.K.S.D (P.G) College-Kaithal

For reduction of use of paper, paperless work has been adopted in all offices and laboratories. The following initiatives are already in vogue in functioning of college:

1. Paperless work has been adopted by teachers and staff members
2. Teachers share data among students and staff
3. WhatsApp groups are created for communication.
4. Applications like LMS, Shiksha Setu, google forms, Cisco Webex are used to share data and gathering of information (assessments, tests, assignments, notes, projects, ppt etc.
5. Online e-content has been prepared by college students.
6. Staff members attended training to use and develop e-content.

PAPER USE AND PRINTING GOALS

1. There are efforts already directed through use of E-Books for reducing the use of paper.
2. There are instructions to staff and student to resort to printing only if it is absolutely unavoidable.
3. Papers should be purchased that have recycled content.
4. Paper use and printing goals are already circulated by College management is followed by students and staff of College.

E-Library

E-books v/s Traditional books data and year wise history to moving from traditional to E-system. There is exemplary effort by the head of library to make use of E-library through numerous steps that have been initiated and continually monitored and implemented.

The record of Library activities is given here under:
The college library has access to the following valuable e-library resources that are made available to students and staff**.**

1. The library has sufficient number of computer stations in library to facilitate the use of available resources online.
2. NDLI (National digital library of India)
    - College is a registered member of NDLI
    - Through this student can have access to more than eight crore resources.

3. N List: National library and information services
    - Infrastructure for scholarly content-subscribed
    - Providing access to lacs of e-resources subscribed through NList programme INFLIBNET
4. Created LMS for students and faculty members.
5. E-PG Path Shala
   Guiding to use E-Path Shala to students for getting material for their syllabus that provides access to more than 22000+ resources.

   The availability of all resources for the students and faculty members is regularly communicated evident from the following attached communications.

RAM KRISHAN LIBRARY
R.K.S.D. (PG) COLLEGE, KAITHAL
LIBRARY STATISTICS AS PER INFORMATION REQUIRED

No. of Books (Hard Copies) purchased in last three years	**2019-20 = 993** **2020-21 = 1177** **2021-22= 453**
E-Books /E-journals	**1. Subscribed through NLIST Programme of INFLIBNET: E-journlas-6200+titles E-books=4 lac+ (through libraries contributing in NLIST)** **2. More than 8 crore e-resources available through NDLI (National Digital Library of India)** **3. LMS: E-content developed by faculty in available through Google drive** **4. College Repository ('Gyananjli-College Magazines' and Scanned News are available through Google Drive)**
Awareness for use of E-journals and e-books	**Activities conducted:** **1. An event on Awareness and use of NDLI conducted on 06.09.2022.** **2. Regularly make aware users about NLIST and NDLI through notices and on visiting the users in library**

Other Information

Name of the Library	**RAM KRISHAN LIBRARY**
Established	**1954**
Total Existing Books	**Total =50629** **Textbooks=46841** **Reference Books =3788**
Weeded Out Books	**Till date 45516**
Magazines	**87**
Newspapers	**16 titles**
E-journals and E-books	**Subscribed through NLIST Programme of INFLIBNET** **E-journlas-6200+titles** **E-books=4 lac+ (through libraries contributing in NLIST)**
Centralized AC	**Yes**
Seating Capacity	**160**
Computerized	**Yes**
Classification of Books	**Yes**
Timings	**09:00 A.M. to 06:30 P.M.**

Library Activities in 2021-22

1. An Online/Offline seminar on use and awareness of NDLI was organized on 6th September 2021 and Dr. Jivesh Bansal, Librarian, Panjab University, Chandigarh delivered a lecture as resource person.
2. To promote reading culture and awareness about books available in the library; an exhibition of books available in the library was organized on 12.02.2022 in the library.

Dear colleague,

NDLI (National Digital Library of India) Club is going to organize an event on NDLI in Indian Languages. The event details are mentioned below and you are requested to encourage all the students and faculty members of your institute to join this event:

Event Date and Time: Mon Jul 12, 2021, 06:30 PM .

Event Location: https://www.youtube.com/c/PNPanickerFoundation .

Event Description: This event has been created by the NDLI Club Central Team as part of the 25th P N Panicker National Reading/ Digital Reading Month Celebrations. Resource Person: Dr. Plaban Kumar Bhowmick, Asst. Professor - Centre for Educational Technology, IIT Kharagpur

10/7/21

Dr. Naresh Kumar
Librarian

(Dr. Sanjay Goyal)
Principal

RAM KRISHAN LIBRARY
R.K.S.D. (PG) COLLEGE, KAITHAL

Dated: 08.07.2021

We are happy to share with you that R.K.S.D. (PG) College, Kaithal has been approved to start NDLI (National Digital Library of India) Club sponsored and mentored by Ministry of Education, Government of India, through its National Mission on Education through Information and Communication Technology (NMEICT).

National Digital Library of India (NDLI) is a virtual repository of learning resources which enables us to search/browse 7 crore+ records (books, proceedings, video lectures, audio lectures, previous papers etc.). Besides this, NDLI provides user group-specific services such as Examination Preparatory for School /College students and job aspirants along with Services for Researchers and general learners are also provided.

As a next step for registration with NDLI, we request you to register/ share the given below **passkey** with all the interested students, faculty members and other staff members to enroll at NDLI Club by visiting this URL: https://club.ndl.iitkgp.ac.in/sign-up.

Passkey: **5d6cf667-e593-4f93-9c4b-fc43d058cbeb**

Dr. Naresh Kumar
Librarian

(Dr. Sanjay Goyal)
Principal

To,

Director

NDLI CLUB (M.O.E)

2nd Floor IIT Kharagpur Kolkata Campus

HC Block, Sector – III Salt Lake City

Kolkata – 700106.

Subject : NDLI Club Registration Request.

Dear Sir,

On behalf of R.K.S.D. (PG) College, Kaithal, I am requesting to create NDLI club for our institute R.K.S.D. (PG) College, Kaithal .

I have read NDLI club terms and conditions before applying.

Here is the list of Authority of our club R.K.S.D. (PG) College, Kaithal.

Club Patron - Dr. Sanjay Kumar Goyal

Club President - Dr. Geeta Goyal

Club secretary - Dr. Naresh Kumar

Executive Member - Dr. Sanjay Garg

Awaiting your Approval for Same.

Thanks & Regards,

Dr Naresh, LIBRARIAN.

Director/Principal Name : Dr. Sanjay Goyal.

Date : 3/7/2021

Director/Principal Signature :

Director/Principal Stamp :

Principal
R.K.S.D. (PG) College
KAITHAL

Sent in Teachers Group.

RAM KRISHAN LIBRARY
R.K.S.D. (PG) COLLEGE, KAITHAL

Dated: 17.03.2021

All the faculty members are requested to submit the e-content developed during the session 2020-2021 in library for making it a part of digital library.

Dr. Naresh Kuamr
Librarian

Dr. S.K. Goyal
Principal

R.K.S.D. (P.G) COLLEGE, KAITHAL
Library

Dated: 18.09.2020

Dear Colleagues,

We are pleased to share with you, the updated list of publishers providing access of e-books being subscribed through the NLIST programme of INFLIBNET. Worthy faculty members are welcome to access these for teaching and research purposes.

List of Publishers(e-Books) @N-LIST (https://nlist.inflibnet.ac.in/index.php)

E-Books	
Cambridge Books Online [1800 titles]	https://www.cambridge.org/core
E-brary [150000+ titles]	https://ebookcentral.proquest.com/lib/inflibnet-ebooks
EBSCoHost-Net Library [936 titles]	http://search.ebscohost.com
Hindustan Book Agency [65+ titles]	https://portal.igpublish.com/iglibrary/
Institute of South East Asian Studies(ISEAS) Books [382+ titles]	https://portal.igpublish.com/iglibrary/
Oxford Scholarship [1402+ titles]	http://www.oxfordscholarship.com/
Springer eBooks [2300 titles]	http://link.springer.com
Sage Publication eBooks [1000 titles]	http://knowledge.sagepub.com
Taylor Francis eBooks [1800 titles]	https://www.taylorfrancis.com/
Myilibrary-McGraw Hill [1124 titles]	https://ebookcentral.proquest.com/lib/inflibnet-ebooks
South Asia Archive [through NDL]	http://www.southasiaarchive.com
World e-Books Library [Now available through NDLI only]	https://ndl.iitkgp.ac.in/

Kindly contact to the library in case of any problem while browsing any resource available under the NLIST programme.

Dr.Naresh Kumar
Librarian

Dr. Sanjay Goyal
Principal

Detailed Summary of Library

Despite fewer in numbers the e-books have advantage of being used by multiple students/ faculties simultaneously and thus creating better impact on sustainability in contrary to hard copy that can be read by only one person at a time.

The following recommendations are made

1. Use of E-books be promoted for students and faculty members specially in present Covid situation.
2. No. of E-books made available should be increased continuously.
3. Training on sustainability should be provided.
4. Adaption be promoted considering it to be a new normal.
5. Targets for increasing E-books should be fixed on continual basis.

Training and Awareness

The college is regularly conducting awareness program for students and faculty members.

Governance

Through enactment of Waste Management policy that includes reduction of waste including paper waste and its circulation to all stake holders, sustainability can be achieved. The results are regularly required to be verified at Periodical intervals. These can be managed through internal or external audits.

PLANTATION POLICY, PLANTATION AND INVENTORY

POLICY DOCUMENT

ON

'Plantation in Campus'

RKSD (PG) COLLEGE, KAITHAL

NAAC 'A' Grade accredited, Affiliated to Kurukshetra University, Kurukshetra

Ambala Road, Kaithal -136027 (Haryana)

RKSD (PG) COLLEGE, KAITHAL

Plantation Policy

- We at R.K.S.D COLLEGE (P.G) Kaithal are committed for continual improvement of environment. As trees planted contribute for improving Environment, College has enacted the policy of plantation for the benefit of people and Society.
- Planting a tree has long been a suggestion to better the earth, whether it is outcry and warning of global warming, water crisis or something else. Trees offer many environmental as well as economic and social benefits.
- College with strategic vision of top management and active participation of students, Faculty members, non-teaching staff and other staff shall with solemnly promise to always work and participate for betterment of environment through continual plantation programs.
- There shall be regular awareness program and through face-to-face interaction all stake holders shall be apprised of the benefits of plantation
- The students of R.K.S.D COLLEGE (P.G) Kaithal very well understand the importance of trees in our life and have taken a pledge to contribute their bit in making the college, Cities, nation, and world a better place to live.
- They all pledged to plant more and more trees with the time and take care of the plants and to provide with basic needs as and when needed.
- College has a policy to celebrate Tree Plantation week in college premises twice annually and commits to set a target to add 1 % to the existing plantation annually.
- Through the plantation of trees life shall improve and essential needs of mankind will also be easily managed. Besides absorption of Carbon Dioxide, trees also support life by providing habitat to different species such as squirrels, bees, and birds. Trees cleanse the climate by absorbing carbon dioxide from the environment and releasing oxygen. The trees cool the environment and effects of global warming are mitigated.
- We at R.K.S.D COLLEGE (P.G) Kaithal once again vows to plant trees as per policy, assure survival of trees by adequate maintenance and watering practices and species selected for plantation shall be such that have very minimal water requirement.
- We also shall decide optimally to have turf (Grass area) as per harvest requirement for reduction of water footprint for horticulture use in college premises.

Dr. Sanjay K. Goyal
Principal

Plantation Inventory

The inventory of plants is maintained. The inventory of plantation is attached in annexure-H

There is a track on survival of species planted afresh as per plantation policy and plan and the survival rate has been found to be satisfactory as informed.

Total No. of plants with share of different categories is as under

Total No. of Trees- 1124 Nos.

Recommendations

1. All trees should be numbered and labelled.
2. Inventory of tree with type of tree be maintained and kept updated at all times.

Plantation Program

The R.K.S.D (P.G) College-Kaithal, has regular plantation program.

Native species are planned to be planted and it is very good as these have minimum water requirement.

PHOTOGRAPHS OF TREE PLANTATION

आरकेएसडी पीजी कालेज में किया पौधारोपण

आरकेएसडी कालेज में आयोजित कार्यक्रम में पौधारोपण करते एनसीसी कैडेट्स व स्टाफ सदस्य। ● कालेज पीआरओ

जागरण संवाददाता, कैथल : आरकेएसडी पीजी कालेज में अंतरराष्ट्रीय योग दिवस के तहत जारी गतिविधियों में योग क्रियाओं व व्याख्यान आयोजित किया। कालेज में शारीरिक विभाग में कार्यरत एवं योग प्रशिक्षक प्रो. दीपिका ने योग क्रिया करवाई एवं इनके लाभ एवं करने के तरीकों को समझाया। इस कार्यक्रम में एनसीसी एवं एनएसएस के करीब 150 विद्यार्थियों ने हिस्सा लिया। प्राचार्य डा. संजय गोयल व एनसीसी के अधिकारहयों डा. आरपी मौन, डा. रघुबीर लांबा, एनएसएस के अधिकारी डा. जयबीर धारीवाल, डा. एसपी वर्मा एवं डा. श्वेता ने इस कार्यक्रम में भागीदारी की। इसके बाद पौधारोपण का कार्य भी किया।


NCC


bwin

Details of Manure and fertilizer used annually

Composting pits are made and most of the time manure is used. Effort should be made to eliminate use of fertilizers.

Air Quality

CPCB GUIDELINES

Exhaust of DG Sets are required to be raised as per CPCB requirement.

There is no record of air quality testing done earlier.

As per WHO guidelines the following should be the limits for Air Quality

Particulate matter

Guidelines	
$PM_{2.5}$:	**10 µg/m³ annual mean** **25 µg/m³ 24-hour mean**
PM_{10}:	**20 µg/m³ annual mean** **50 µg/m³ 24-hour mean**

Carbon Di-Oxide

Normal outdoor level: 350 - 450 ppm. acceptable levels: **< 600 ppm**. complaints of stuffiness and odors: 600 - 1000 ppm. ASHRAE and OSHA standards: 1000 ppm. general drowsiness: 1000 - 2500 ppm. Acceptable indoor level is 500ppm differential from outdoor levels

AIR DATA - R.K.S.D.(P.G.) College, Kaithal					
S no	**Location**	**PM-2.5**	**PM-10**	**Particles**	**Remarks**
1	Zoology Department at 9.30 AM	115.4	170.7	12035	Extremely High
2	Zoology Department at 11 AM	7.4	10.8	771	Satisfactory
3	Chemistry Lab - I Room no - 39	9.5	14.4	1130	Satisfactory
4	Chemistry Lab Chemical Storeroom no - 40	8.4	12.5	2872	Satisfactory
5	Physics Lab - II Room no - 42	7	11.1	783	Satisfactory
6	Computer Lab - III Room no - 53	7.8	10.9	753	Satisfactory
7	Corridor First Floor	6.6	9.2	572	Satisfactory
8	Electronics Lab - II Room no - 28	9.7	14.3	837	Satisfactory
9	Classroom no - 3	9.1	13.8	949	Satisfactory
10	Classroom no - 14	6.9	10.7	815	Satisfactory
11	Library	7.8	11.5	834	Satisfactory
12	Reading Room	24.4	35.7	2972	Satisfactory
13	Outside Ground opposite Canteen	3.5	5.8	557	Satisfactory
14	Evening College Classroom - 307	5.9	10.8	756	Satisfactory
15	Evening College Staff Room	7.2	10.2	677	Satisfactory
16	Evening College Principal Room	6.6	9.9	708	Satisfactory
17	Evening College MP Hall	30.2	54.5	1534	Satisfactory
18	Evening College Computer Lab	7.7	12.6	702	Satisfactory
19	Evening College Corridor	13.3	17.9	629	Satisfactory
20	Canteen	16.5	24.3	942	Satisfactory
21	Principal Room	5.6	8.9	672	Satisfactory
22	Admin. Office	5.3	7.8	550	Satisfactory
23	Chairman Office	6.1	9.5	711	Satisfactory
24	Tagore Bhawan Classroom no-111	5.8	10.7	753	Satisfactory
25	Tagore Bhawan Classroom no-118	6.8	10.6	8.16	Satisfactory
26	Diamond Jubilee Bhawan Classroom no-406	6.4	9.2	716	Satisfactory
27	Diamond Jubilee Bhawan Classroom no-418	5.9	10.4	761	Satisfactory
28	B.Ed. Principal Room	5.8	8.4	685	Satisfactory
29	B.Ed. Classroom no-203	6.8	10.5	816	Satisfactory

AIR DATA - R.K.S.D.(P.G.) College, Kaithal			
Sno	**Location**	**CO2**	**Remarks**
1	Zoology Department at 9.30 AM	1103	Satisfactory based on differential 500 ppm from Outside.
2	Zoology Department at 11 AM	1132	Same as above
3	Chemistry Lab - I Room no - 39	995	Same as above
4	Chemistry Lab Chemical Storeroom no - 40	980	Same as above
5	Physics Lab - II Room no - 42	964	Same as above
6	Computer Lab - III Room no - 53	953	Same as above
7	Corridor First Floor	963	Same as above
8	Electronics Lab - II Room no - 28	955	Same as above
9	Classroom no - 3	934	Same as above
10	Classroom no - 14	974	Same as above
11	Library	1001	Same as above
12	Reading Room	1375	High
13	Outside Ground opposite Canteen	1078	Same as above
14	Evening College Classroom - 307	876	Same as above
15	Evening College Staff Room	861	Same as above
16	Evening College Principal Room	867	Same as above
17	Evening College MP Hall	885	Same as above
18	Evening College Computer Lab	894	Same as above
19	Evening College Corridor	896	Same as above
20	Canteen	879	Same as above
21	Principal Room	914	Same as above
22	Admin. Office	1068	Same as above
23	Chairman Office	1195	Same as above
24	Tagore Bhawan Classroom no-111	874	Same as above
25	Tagore Bhawan Classroom no-118	972	Same as above
26	Diamond Jubilee Bhawan Classroom no-406	864	Same as above
27	Diamond Jubilee Bhawan Classroom no-418	869	Same as above
28	B.Ed. Principal Room	910	Same as above
29	B.Ed. Classroom no-203	972	Same as above

AIR DATA - R.K.S.D.(P.G.) College, Kaithal			
Sno	**Location**	**NCHO**	**Remarks**
1	Zoology Department at 9.30 AM	0.005	Satisfactory
2	Zoology Department at 11 AM	0.007	Satisfactory
3	Chemistry Lab - I Room no - 39	0.001	Satisfactory
4	Chemistry Lab Chemical Storeroom no - 40	0.001	Satisfactory
5	Physics Lab - II Room no - 42	0.001	Satisfactory
6	Computer Lab - III Room no - 53	0.001	Satisfactory
7	Corridor First Floor	0.001	Satisfactory
8	Electronics Lab - II Room no - 28	0.001	Satisfactory
9	Classroom no - 3	0.018	Satisfactory
10	Classroom no - 14	0.001	Satisfactory
11	Library	0.127	Satisfactory
12	Reading Room	0.046	Satisfactory
13	Outside Ground opposite Canteen	0.001	Satisfactory
14	Evening College Classroom - 307	0.002	Satisfactory
15	Evening College Staff Room	0.001	Satisfactory
16	Evening College Principal Room	0.004	Satisfactory
17	Evening College MP Hall	0.017	Satisfactory
18	Evening College Computer Lab	0.039	Satisfactory
19	Evening College Corridor	0.001	Satisfactory
20	Canteen	0.001	Satisfactory
21	Principal Room	0.013	Satisfactory
22	Admin. Office	0.044	Satisfactory
23	Chairman Office	0.003	Satisfactory
24	Tagore Bhawan Classroom no-111	0.001	Satisfactory
25	Tagore Bhawan Classroom no-118	0.001	Satisfactory
26	Diamond Jubilee Bhawan Classroom no-406	0.003	Satisfactory
27	Diamond Jubilee Bhawan Classroom no-418	0.001	Satisfactory
28	B.Ed. Principal Room	0.011	Satisfactory
29	B.Ed. Classroom no-203	0.001	Satisfactory

The values of PM-2.5 and PM-10 are very high, and values are dangerous for human beings. Values of CO_2 and Formaldehyde are satisfactory. There is not much that can be done by college for management of particulate matter. Only any loose soil or construction material inside premises should be sprinkled with water to mitigate to some extent.

Significance of Refrigerant for Environment

Table depicting properties of Refrigerants

Refrigerant	Global Warming Poetential	Ozone Depletion Potential
R 22	1810	Medium
R 410A	2088	Nil
R 32	675	Nil
R 134A	1430	Nil
R 290	3	Nil
R 600A	3	Nil

Refrigerant	Type	ODP	GWP	Atmospheric lifetime (years)
R12	CFC	0.9	8500	102
R22	HCFC	0.06	1700	13.3
R134a	HFC	0	1300	14
R407C	HFC blend	0	1610	36
R410A	HFC blend	0	1900	36
Ammonia (R717)	Natural compound	0	0	< 1
Propane (R290)	HC	0	3	< 1
R1234yf	HFC unsat.	0	6	Very low
R1234ze	HFC unsat.	0	6	Very low

Details of Refrigerant used in installed Air Conditioners

Data of Refrigerants is maintained. In seven Air conditioners R-22 gas is still existing

All window type Air conditioners those are with R-22 refrigerant be replaced with zero ODP, environment friendly refrigerants. ON replacement all ACs should be purchased with zero ODP refrigerants. It is recommended that in future all procurement for AC's, Water cooler etc. be made with consideration for Environment friendly refrigerants.

Action for replacement of ACs with zero ODP refrigerant be initiated in phases.

Recommendations

1. It is recommended that in future care should be taken to purchase Air conditioners with refrigerants for which GWP is low and ODP is nil.
2. Life cycle cost should be considered for making decision about purchase of Air Conditioners.
3. All AC's that were procured more than 8 years ago should be replaced with best-in-class energy efficient Air Conditioners after taking into consideration Life Cycle Cost. This will eliminate existing AC's impact on environment through low impact refrigerant and also with low consumption of electricity thus reducing

ECO FRIENDLY HOUSE KEEPING MATERIALS

At present eco-friendly housekeeping material are not used. It is recommended that Green Seal -37 compliant an international standard or Green Pro-CII certified housekeeping material should be used for reduction of impact of activities of college o environment.

Green Seal -37 compliant an international standard or Green Pro-CII certification

It is recommended that Eco Friendly material and Sustainable material as per NBC-2016 guidelines be procured and used.

CII
Confederation of Indian Industry

GreenPro

GreenPro Certification Standard for

Cleaning Chemicals

Version 1.0

General Purpose Cleaners

Eco friendly housekeeping materials are recommended to be used for all cleaning application should be Green Pro or any similar Indian standard should be procured in future and records of such procurement b documented for future references.

The cleaning material may be required for following applications and also may be some other in addition to these.

1. Glass Cleaners
2. Bathroom Cleaners
3. Disinfectants and Sanitizers
4. Cleaner/Degreasers
5. Carpet and Upholstery Cleaners
6. Floor Cleaners
7. Liquid Hand Soap
8. Furniture Polish

Ventilation assessment

The areas constructed have been provided with adequate windows and ventilators have been provided @ more than 6% of floor area in most of the area as per requirement of ventilation as per IGBC operation and maintenance green building rating system.

IN Evening branch classroom and Diamond Jubilee classrooms ventilation has been found to be deficient. Openable windows are recommended to be provided to maintain the ratio of minimum 6 %.

The ventilation in most of the areas have been found to be satisfactory as per requirement of green building standard. Where lacking ventilation be supplemented through making fixed glasses openable.

VENTILATION ASSESSMENT

Natural Ventilation in Rooms -Random Basis									
S.No.	DESCRIPTION	AREA OF ROOM			AREA OF WINDOWS-openable				Percentage of Openable window are to the carpet area- Min required 6 %
	LOCATION	Length in mtrs	Width in mtrs	Total Area in Sqmtrs	Length in mtrs	Width in mtrs	QTY of Windows	Total Area in Sqmtrs	Red Indicates deficient ventilation
1	Diamond Jubilee Bhawan Classroom no - 408	6.1	7.6	46.36	0.475	1.15	4	2.185	4.71
2	Diamond Jubilee Bhawan Classroom no - 414	6.1	7.6	46.36	0.475	1.15	4	2.185	4.71
3	Diamond Jubilee Bhawan Classroom no - 417	7.6	6.1	46.36	0.45	1.15	4	2.07	4.47
4	Diamond Jubilee Bhawan Classroom no - 404	7.6	6.1	46.36	0.45	1.15	4	2.07	4.47
5	Diamond Jubilee Bhawan Classroom no - 406	6.1	7.6	46.36	0.475	1.15	4	2.185	4.71
6	Diamond Jubilee Bhawan Classroom no - 407	6.1	7.6	46.36	0.475	1.15	4	2.185	4.71
7	Diamond Jubilee Bhawan Classroom no - 413	6.1	7.6	46.36	0.475	1.15	4	2.185	4.71
8	Diamond Jubilee Bhawan Classroom no - 418	7.6	6.1	46.36	0.45	1.15	4	2.07	4.47

S.No.	DESCRIPTION	AREA OF ROOM	AREA OF WINDOWS-openable	Percentage of Openable window are to the carpet area-Min required 6 %					Percentage of Openable window are to the carpet area-Min required 6 %
	LOCATION	Length in mtrs	Width in mtrs	Total Area in Sqmtrs	Length in mtrs	Width in mtrs	QTY of Windows	Total Area in Sqmtrs	Red Indicates deficient ventilation
9	Zoology Lab Room no - 31	8.2	7	57.40	1.8	1.2	4	8.64	15.05
10	Botany Lab Room no - 37	10.3	6.7	69.01	1.8	1.2	3	6.48	9.39
11	Physics Lab - 1 Room no - 42	9.6	6.7	64.32	1.8	1.2	2	4.32	6.72
12	Classroom no - 8	8.2	7	57.40	1.8	1.2	4	8.64	15.05
13	Classroom no - 9	6.7	6.7	44.89	1.8	1.2	2	4.32	9.62
14	Classroom no - 10	6.7	6.7	44.89	1.8	1.2	2	4.32	9.62
15	Classroom no - 11	6.7	6.7	44.89	1.8	1.2	2	4.32	9.62
16	Classroom no - 12	6.7	6.7	44.89	1.8	1.2	2	4.32	9.62
17	Classroom no - 14	6.7	6.7	44.89	1.8	1.2	2	4.32	9.62
18	Classroom no - 15	6.7	6.7	44.89	1.8	1.2	2	4.32	9.62
19	Classroom no - 16	6.7	6.7	44.89	1.8	1.2	2	4.32	9.62
20	Classroom no - 17	6.7	6.7	44.89	1.8	1.2	2	4.32	9.62
21	Classroom no - 19	6.9	6.8	46.92	1.8	1.2	2	4.32	9.21
22	Classroom no - 20	6.9	6.8	46.92	1.8	1.2	2	4.32	9.21
23	Classroom no - 21	6.9	6.8	46.92	1.8	1.2	2	4.32	9.21
24	Classroom no - 22	6.9	6.8	46.92	1.8	1.2	2	4.32	9.21

S.No.	DESCRIPTION	AREA OF ROOM	AREA OF WINDOWS-openable	Percentage of Openable window are to the carpet area-Min required 6 %					Percentage of Openable window are to the carpet area-Min required 6 %
	LOCATION	Length in mtrs	Width in mtrs	Total Area in Sqmtrs	Length in mtrs	Width in mtrs	QTY of Windows	Total Area in Sqmtrs	Red Indicates deficient ventilation
25	Classroom no - 23	6.1	6.7	40.87	1.2	0.9	1	1.08	12.06
					1.2	1.8	1	2.16	
					1.3	1.3	1	1.69	
26	Classroom no - 35	2.8	6.7	18.76	1.8	1.2	1	2.16	11.51
27	Classroom no - 46	6.9	6.8	46.92	1.8	1.2	2	4.32	9.21
28	Classroom no - 47	6.9	6.8	46.92	1.8	1.2	2	4.32	9.21
29	Classroom no - 48	6.9	6.8	46.92	1.8	1.2	2	4.32	9.21
30	Classroom no - 49	6.9	6.8	46.92	1.8	1.2	2	4.32	9.21
31	Tagore Bhawan Classroom - 109	4.9	7.5	36.75	0.35	1.3	4	1.82	12.17
					0.51	1.3	4	2.652	
32	Tagore Bhawan Classroom - 110	4.9	7.5	36.75	0.35	1.3	4	1.82	12.17
					0.51	1.3	4	2.652	
33	Tagore Bhawan Classroom - 111	4.9	7.5	36.75	0.35	1.3	4	1.82	12.17
					0.51	1.3	4	2.652	
34	Tagore Bhawan Classroom - 112	4.9	7.5	36.75	0.35	1.3	4	1.82	12.17
					0.51	1.3	4	2.652	
35	Tagore Bhawan Classroom - 113	4.9	7.5	36.75	0.35	1.3	2	0.91	20.52
					0.51	1.3	10	6.63	

S.No.	DESCRIPTION	AREA OF ROOM	AREA OF WINDOWS-openable	Percentage of Openable window are to the carpet area-Min required 6 %					Percentage of Openable window are to the carpet area-Min required 6 %
	LOCATION	Length in mtrs	Width in mtrs	Total Area in Sqmtrs	Length in mtrs	Width in mtrs	QTY of Windows	Total Area in Sqmtrs	Red Indicates deficient ventilation
36	Tagore Bhawan Classroom - 115	4.9	7.5	36.75	0.35	1.3	4	1.82	12.17
					0.51	1.3	4	2.652	
37	Tagore Bhawan Classroom - 116	4.9	7.5	36.75	0.35	1.3	4	1.82	12.17
					0.51	1.3	4	2.652	
38	Tagore Bhawan Classroom - 118	4.9	7.5	36.75	0.35	1.3	4	1.82	12.17
					0.51	1.3	4	2.652	
39	Tagore Bhawan Classroom - 119	4.9	7.5	36.75	0.35	1.3	4	1.82	12.17
					0.51	1.3	4	2.652	
40	Tagore Bhawan Classroom - 120	4.9	7.5	36.75	0.35	1.3	4	1.82	12.17
					0.51	1.3	4	2.652	
41	Tagore Bhawan Classroom - 122	4.9	7.5	36.75	0.35	1.3	4	1.82	12.17
					0.51	1.3	4	2.652	
42	Tagore Bhawan Classroom - 123	4.9	7.5	36.75	0.35	1.3	4	1.82	12.17
					0.51	1.3	4	2.652	
43	Tagore Bhawan Classroom - 124	4.9	7.5	36.75	0.35	1.3	4	1.82	12.17
					0.51	1.3	4	2.652	
44	Tagore Bhawan Classroom - 125	4.9	7.5	36.75	0.35	1.3	4	1.82	12.17
					0.51	1.3	4	2.652	
45	Evening College Second Floor Room no-329	6.1	9.14	55.75	1.2	0.45	3	1.62	**2.91**

S.No.	DESCRIPTION	AREA OF ROOM	AREA OF WINDOWS-openable	Percentage of Openable window are to the carpet area-Min required 6 %					Percentage of Openable window are to the carpet area-Min required 6 %
	LOCATION	Length in mtrs	Width in mtrs	Total Area in Sqmtrs	Length in mtrs	Width in mtrs	QTY of Windows	Total Area in Sqmtrs	Red Indicates deficient ventilation
46	Evening College Second Floor Room no-330	6.1	6.86	41.85	1.2	0.45	2	1.08	**2.58**
47	Evening College Second Floor Room no-331	6.1	6.86	41.85	1.2	0.45	2	1.08	**2.58**
48	Evening College Second Floor Room no-332	6.1	9.14	55.75	1.2	0.45	3	1.62	**2.91**
49	Evening College Second Floor Room no-333	6.1	9.14	55.75	1.2	0.45	2	1.08	**1.94**
50	Evening College Second Floor Room no-334	6.1	9.14	55.75	1.2	0.45	2	1.08	**1.94**
51	Evening College Second Floor Room no-335	6.1	9.14	55.75	1.2	0.45	2	1.08	**1.94**
52	Evening College Second Floor Room no-336	6.1	9.14	55.75	1.2	0.45	3	1.62	**2.91**
53	Evening College Second Floor Room no-337	6.1	9.14	55.75	1.2	0.45	3	1.62	**2.91**
54	Evening College Second Floor Room no-338	6.1	9.14	55.75	1.2	0.45	3	1.62	**2.91**
55	Evening College Second Floor Room no-339	4.88	8.22	40.11	1.2	0.45	2	1.08	**2.69**

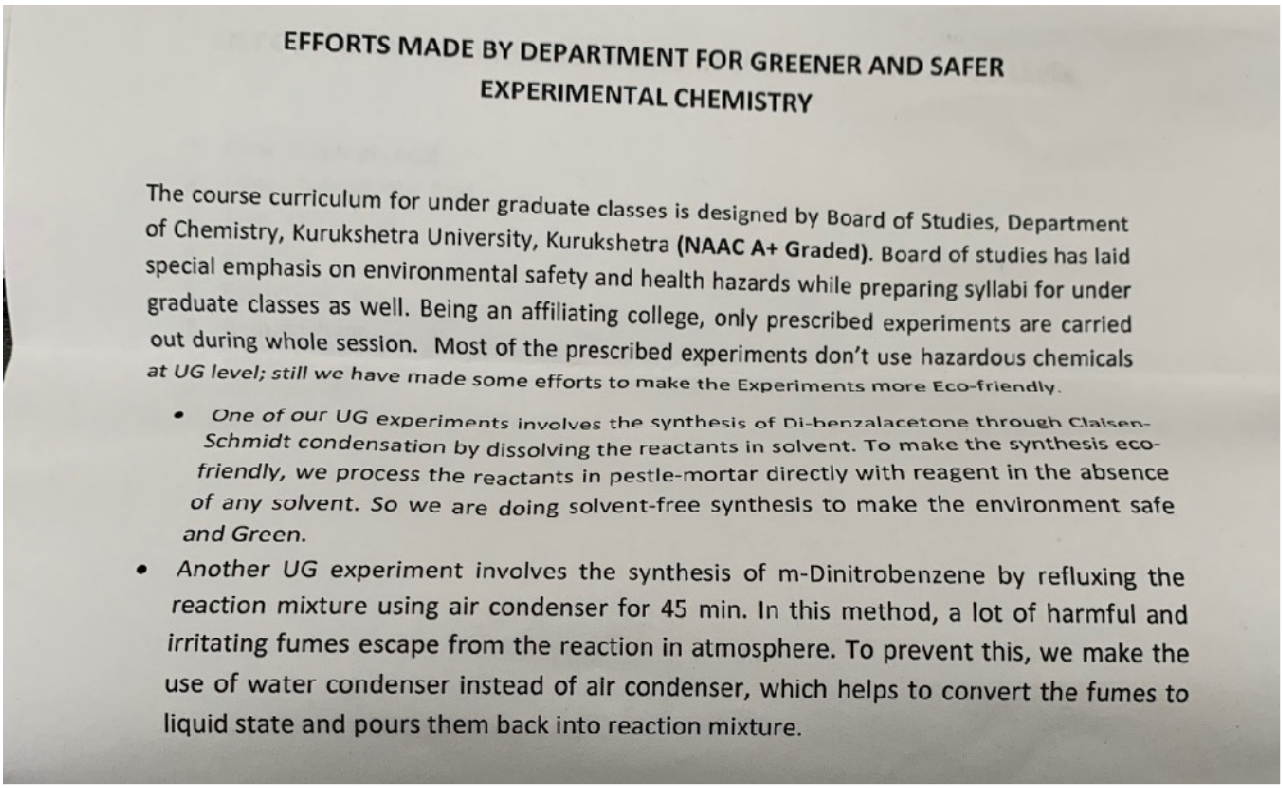
S.No.	DESCRIPTION	AREA OF ROOM	AREA OF WINDOWS-openable	Percentage of Openable window are to the carpet area-Min required 6 %					Percentage of Openable window are to the carpet area-Min required 6 %
	LOCATION	Length in mtrs	Width in mtrs	Total Area in Sqmtrs	Length in mtrs	Width in mtrs	QTY of Windows	Total Area in Sqmtrs	Red Indicates deficient ventilation
56	Evening College Second Floor Room no-340	3.66	8.22	30.09			0	0	**0.00**
57	Evening College Second Floor Room no-341	6.1	9.14	55.75	1.2	0.45	2	1.08	**1.94**
58	Evening College Second Floor Room no-342	6.1	9.14	55.75	1.2	0.45	2	1.08	**1.94**
59	Evening College Second Floor Room no-343	6.1	9.14	55.75	1.2	0.45	2	1.08	**1.94**
60	Evening College First Floor Room no-217	6.1	9.14	55.75	1.2	0.45	3	1.62	**2.91**
61	Evening College First Floor Room no-219	6.1	9.14	55.75	1.2	0.45	3	1.62	**2.91**
62	Evening College First Floor Room no-221	6.1	9.14	55.75	1.2	0.45	3	1.62	**2.91**
63	Evening College First Floor Room no-222	6.1	9.14	55.75	1.2	0.45	3	1.62	**2.91**
64	Evening College First Floor Room no-223	6.1	9.14	55.75	1.2	0.45	3	1.62	**2.91**
65	Evening College First Floor Room no-224	4.88	8.22	40.11	1.2	0.45	2	1.08	**2.69**

S.No.	DESCRIPTION	AREA OF ROOM	AREA OF WINDOWS-openable	Percentage of Openable window are to the carpet area-Min required 6 %					Percentage of Openable window are to the carpet area-Min required 6 %
	LOCATION	Length in mtrs	Width in mtrs	Total Area in Sqmtrs	Length in mtrs	Width in mtrs	QTY of Windows	Total Area in Sqmtrs	Red Indicates deficient ventilation
66	Evening College First Floor Room no-225	3.66	8.22	30.09			0	0	**0.00**
67	Evening College First Floor Room no-226	6.1	9.14	55.75	1.2	0.45	3	1.62	**2.91**
68	Evening College First Floor Room no-227	6.1	9.14	55.75	1.2	0.45	3	1.62	**2.91**
69	Evening College First Floor Room no-228	6.1	9.14	55.75	1.2	0.45	3	1.62	**2.91**
70	Evening College Ground Room no-306	6.1	9.14	55.75	1.2	0.45	3	1.62	**2.91**
71	Evening College Ground Room no-307	6.1	9.14	55.75	1.2	0.45	3	1.62	**2.91**
72	Evening College Ground Room no-308	6.1	9.14	55.75	1.2	0.45	3	1.62	**2.91**
73	Evening College Ground Room no-309	6.1	9.14	55.75	1.2	0.45	3	1.62	**2.91**
74	Evening College Ground Room no-310	6.1	9.14	55.75	1.2	0.45	3	1.62	**2.91**
75	Evening College Ground Room no-311	4.88	8.22	40.11	1.2	0.45	2	1.08	**2.69**

S.No.	DESCRIPTION	AREA OF ROOM	AREA OF WINDOWS-openable	Percentage of Openable window are to the carpet area-Min required 6 %					Percentage of Openable window are to the carpet area-Min required 6 %
	LOCATION	Length in mtrs	Width in mtrs	Total Area in Sqmtrs	Length in mtrs	Width in mtrs	QTY of Windows	Total Area in Sqmtrs	Red Indicates deficient ventilation
76	Evening College Ground Room no-312	3.66	8.22	30.09			0	0	**0.00**
77	Evening College Ground Room no-313	6.1	9.14	55.75	1.2	0.45	3	1.62	**2.91**
78	Evening College Ground Room no-314	6.1	9.14	55.75	1.2	0.45	3	1.62	**2.91**
79	Evening College Ground Room no-315	6.1	9.14	55.75	1.2	0.45	3	1.62	**2.91**
80	Evening College Staff Room	6.1	9.14	55.75	1.2	0.45	3	1.62	**2.91**

Chemistry Lab

Ventilation of chemistry lab is discharged at first floor level This is required to be thrown above building height by provision of exhaust hood and exhaust duct. Cross contamination should be eliminated.



EFFORTS MADE BY DEPARTMENT FOR GREENER AND SAFER EXPERIMENTAL CHEMISTRY

The course curriculum for under graduate classes is designed by Board of Studies, Department of Chemistry, Kurukshetra University, Kurukshetra **(NAAC A+ Graded)**. Board of studies has laid special emphasis on environmental safety and health hazards while preparing syllabi for under graduate classes as well. Being an affiliating college, only prescribed experiments are carried out during whole session. Most of the prescribed experiments don't use hazardous chemicals at UG level; still we have made some efforts to make the Experiments more Eco-friendly.

- One of our UG experiments involves the synthesis of Di-benzalacetone through Claisen-Schmidt condensation by dissolving the reactants in solvent. To make the synthesis eco-friendly, we process the reactants in pestle-mortar directly with reagent in the absence of any solvent. So we are doing solvent-free synthesis to make the environment safe and Green.
- Another UG experiment involves the synthesis of m-Dinitrobenzene by refluxing the reaction mixture using air condenser for 45 min. In this method, a lot of harmful and irritating fumes escape from the reaction in atmosphere. To prevent this, we make the use of water condenser instead of air condenser, which helps to convert the fumes to liquid state and pours them back into reaction mixture.

There are constant endeaveor by all stake holders in college towards mitigation of impact on climate due to activities of college.. Above is one example of the department of Chemistry for mitigation of impact of activities of college on environment is exihibited..

Table 11 Recommended Rate of Air Circulation for Different Areas

(*Clause* 11.3)

Sl No. (1)	Application (2)	Air Change per Hour (3)
1)	Assembly rooms	4-8
2)	Bakeries	20-30
3)	Banks/building societies	4-8
4)	Bathrooms	6-10
5)	Bedrooms	2-4
6)	Billiard rooms	6-8
7)	Boiler rooms	*see* **11.2.2**
8)	Cafes and coffee bars	10-12
9)	Canteens	8-12
10)	Cellars	3-10
11)	Changing rooms	6-10
12)	Churches	1-3
13)	Cinemas and theatres	10-15
14)	Club rooms	12, *Min*
15)	Compressor rooms	10-12
16)	Conference rooms	8-12
17)	Corridors	5-10
18)	Dairies	8-12
19)	Dance halls	12, *Min*
20)	Dye works	20-30
21)	Electroplating shops	10-12
22)	Engine rooms/DG rooms/GG rooms	*see* **11.2.2**
23)	Entrance halls	3-5
24)	Factories and work shops	8-10
25)	Foundries	15-30
26)	Garages	6-8
27)	Glass houses	25-60
28)	Gymnasium	6, *Min*
29)	Hair dressing saloon	10-15
30)	Hospitals-sterilising	15-25
31)	Hospital-wards	6-8
32)	Hospital domestic	15-20
33)	Laboratories	6-15
34)	Launderettes	10-15
35)	Laundries	10-30
36)	Lavatories	6 -15
37)	Lecture theatres	5-8
38)	Libraries	3-5
39)	Lift cars	20, *Min*
40)	Living rooms	3-6
41)	Mushroom houses	6-10
42)	Offices	6-10
43)	Paint shops(not cellulose)	10-20
44)	Photo and X-ray dark room	10-15
45)	Public house bars	12, *Min*
46)	Recording control rooms	15-25
47)	Recording studios	10-12
48)	Restaurants	8-12
49)	Schoolrooms	5-7
50)	Shops and supermarkets	8-15
51)	Shower baths	15-20
52)	Stores and warehouses	3-6
53)	STP rooms	30, *Min*
54)	Squash courts	4, *Min*
55)	Swimming baths	10-15
56)	Toilets	6-10
57)	Underground vehicle parking	6, *Min*
58)	Utility rooms	15-30
59)	Welding shops	15-30

Fire Safety:

No halon-based fire extinguishers have been used, it is very good initiative. As a future guideline It is recommended that of fire suppression system is to be used for any fire extinguishing system, only clean agents with minimum environmental impact should be installed.

For sustainability there is requirement of reducing the fire risk. There is requirement of firefighting to be followed as per NBC-2016. It is recommended that audit for fire safety-General safety and Electrical safety should be got conducted and required provisions should be made for safety and averting loss of life and property.

CUSTODIAL CHEMICAL USE

Chemical for one-year requirement is stored in Labs and these are stored in a separate store. The store requires to be ventilated and hazard analysis should be got done through Material Specification Data Sheet and record should be maintained. Proper ventilation with hoods should be designed. The list of custodial chemicals is maintained and kept updated always and is attached as per Annexure-I

Sustainable Development Goals

Sustainable development should always be practiced in all activities of college. The college administration, students and staff are already aware, and efforts are always put to meet requirement as per applicability.

The principal, teaching and non-teaching staff is aware of these goals and there is a practice of considering these goals while taking decisions in college.

Summarization of Green and Environment Audit findings

An Environment and Green Audit was conducted, the major relevant aspects that were covered in the Environment and Green audit and present level of performance of college are summarized here:

1. **Awareness of Staff:** The concerned staff is very much aware and there are excellent records maintained and kept updated for environmental aspects. This attitude has made the implementation of environmental aspects for activities of college easier and effective.
2. The location of college is in main market thus saving energy for commuting for purchase of grocery and stationery.
3. **Policies, planning and Commitment:** The college has already in place an Environment and Green policy that covers all concerning aspects, plantation policy and commitment for women empowerment and their active participation for improvement of Environment in and around college and also working towards mitigation impact of college activities on climate. Effective Policy preparation and its implementation with appropriate planning is the major contributor for bringing in change and for continual improvement.
4. **College land, structural footprint and maintaining inventory of ventilation, Plumbing and sanitation and recharging of Ground water:** The concerned college staff is maintaining the details of all constructed areas of college building for effective management of ventilation, sanitation and reduction of water use for betterment of Environment and making the college green. There are enough openable windows for requirement of natural ventilation in college premises and only a few places only fixed windows are being made openable for fulfilling the requirement of natural ventilation. Ventilator that has been provided with fixed glasses are now being made openable or provided with louvers for enhancing natural ventilation further. The college already has three rainwaters charging borewells in place.
5. **Plantation and Turf area:** The college is conducting regular plantation program and planting native species that has low consumption of water for their subsistence. The turf area has also been optimized to avert use of excess water that may be required for maintenance of grass. NCC, NSS and other departments have participated in plantation program in recent years despite prevalence of Covid-19.
6. **Health of students and staff:** The college is having a regular arrangement with Dr. Shah Hospital located near old bus stand for treatment of students and other staff members and there is no disease prevalence in students or college staff by virtue of their attendance in college premises.
7. **Transportation:** The college administration is encouraging the mitigation of impact on

environment due to use of transport by students and members of staff. Substantial proportion of population of students are using public transport and then walking to college and also through common bus provided by Vidya NGO.

8. **Procurement Procedures**:
   a. The procurement activities of an institution are very significant for making it sustainable and also in mitigation of energy footprint by purchase of energy efficient equipment.
   b. As Energy consumption has direct bearing on climate change and environment, the awareness of those responsible for purchase of energy consuming equipment should be aware regarding energy efficiency of equipment for considering the same while making purchase.
   c. The purchase committee of RKSD (PG) college Kaithal -members are imparted awareness knowledge on the adverse impact of less energy efficient equipment and thereby increase of carbon footprint due to use of in efficient equipment. They have the understanding that in case of energy efficient equipment **first cost** has not to be the only consideration while making purchase decisions, instead life cycle cost should be considered for making purchase decision of energy consuming equipment.
   d. The purchase committee members are also aware that for any equipment the impact of substances like refrigerants, the fixtures that are containing mercury or other harmful substance is to be avoided absolutely and equipment with zero ODP and with low hazard elements are only to be purchased.
   e. The committee has also been sensitized for purchase of paints, sealants and adhesives with permissible quantity of volatile organic compounds.
   f. The committee has also been made aware for considering recycled content of paper for any future purchases.
   g. The committee members are aware of Ecofriendly housekeeping materials and for future purchases the same shall be considered.
9. **Mercury free Campus**: The management of college is committed to reduce and ultimately eliminate mercury in use of its activities
10. **Use of paper**

    The college has already instructions in place for all members of staff for avoiding the printing wherever possible and also apply other techniques for reduction of paper use.
11. **E-library**

    Use of E-library for online study is encouraged and is also monitored regularly and ratio of E- books to hard copies is increasing year on year with normalized calculations. Use of E-library is implemented and encouraged. The information regarding E-library is disseminated amongst students and faculty members and through active involvement and

thorough in-depth involvement of the head of library activities, the sustainable approach is carried forward.

12. **Sustainable development goals**

    The college staff and students are aware of sustainability goals and practicing the same in their actions as per applicability.

13. **On-site composting and use of manure:**

    Leaves and other botanical waste are treated in composting plant and manure thus formed is used in place of chemical fertilizer and no fertilizer is purchased for plantation. Leftover food is also composted for conversion to manure

14. **Fire Fighting equipment:**

    None of firefighting equipment installed is with high environment impact chemicals like halon etc.

15. **First Aid Fire Fighting equipment:** Fire extinguishers are nor found installed at a number of locations. Immediate action for installation is warranted to make the building safe and thus making the operations sustainable.

16. **Requirement of STP:** Sewage treatment plant is required to be installed for mitigation of impact of college activities on environment and the recycled water will reduce water use and also use of energy as an inter-active effect.

17. **Utilization of Renewable energy plants to optimum generation capacity:**

    There is substantial gap in actual generation as compared to generation capacity. The calculations have been demonstrated in report. The monitoring of generation is required to be done on daily basis**.**

18. **Handling of waste from chemistry lab and exhaust fumes handling**

    Presently there is no practice of proper disposal of chemical effluents and waste generated is thrown along with municipal waste and liquids down the municipal drain. The discharge from chemical lab is required to be stored in plastic containers and disposed of through centralized ETP vendors.

    Exhaust hood is required to be provided at a height of 3.00 meters above building height for safe dispersion of chemicals.

19. **Air Quality**

    The presence of particulate matter is satisfactory. There is nothing that can be done for improvement of same. However, this is required to be continuously monitored and the effect can be reduced by Spraying with RO reject water for area covered with soil is practiced for managing inside air quality to the extent possible if it is exceeding the permissible values during any part of year.

20. Waste management

There is an effective waste management plan and procedures in place that are followed by college for handling of solid, plastic, paper and E- waste.

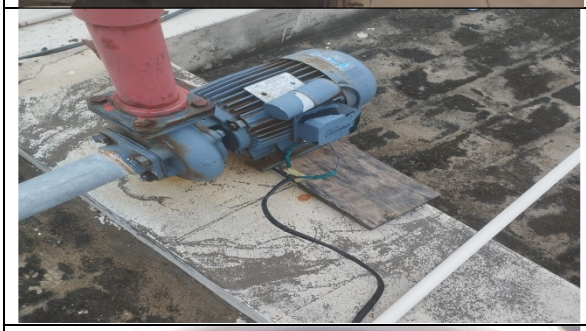
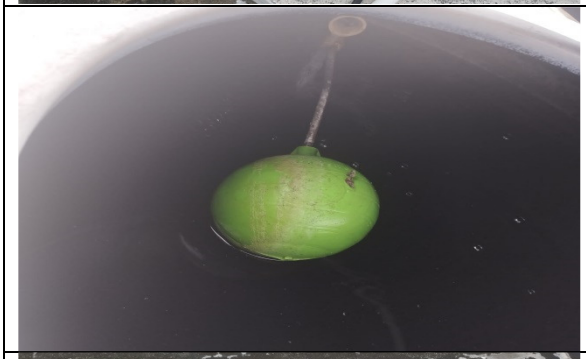
21. Sound Level

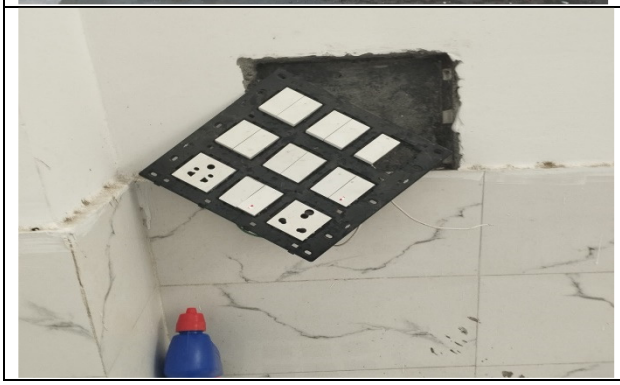
Level of sound in areas of college is within acceptable limits as per length of exposure as per NBC-2016 standards.

----------End of Report----------

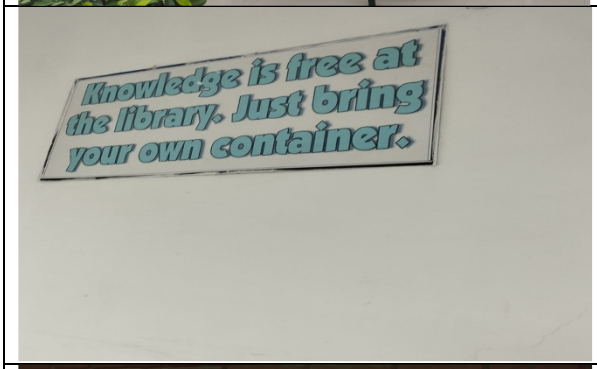
Annexure-A- Photographs-R.K.S. D (P.G) College-Kaithal

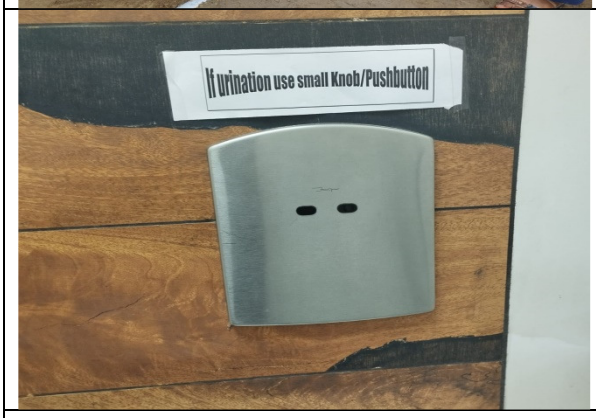
	UPS and Inverter Installed in a confined space without any ventilation. The area should be provided sufficient ventilation to avoid any hazard to the maintenance personnel.
	UPS Batteries installed under UPS inside Lab – No separate Ventilation. These need to be enclosed and ventilation is required to be provided.
	IT dismantled material stored inside Computer Lab– no separate Storage-There should be a system in place for proper timely disposal of dismantled material and dedicated storage space should be allocated.
	UPS Batteries installed under UPS inside Lab – No separate Ventilation- These need to be enclosed and ventilation is required to be provided.

	IT dismantled material stored inside Computer Lab– no separate Storage- There should be a system in place for proper timely disposal of dismantled material and dedicated storage space should be allocated.
	Fire Motor and all other components related to firefighting should be painted red.
	Ball valves installed in Over Head Water Tanks-Good point
	Roof Top Flooring-Tile flooring over mud phaska has been provided. -Cool roof is required to be provided.
	Dry and Wet Waste bins not appropriate coloured

	One Over Head tanks cover locking broken- Such lapses should not be allowed to occur. Extra inventory of covers should always be maintained so that damaged cover of tank is immediately replaced.
	DG exhaust stack not as per the CPCB guidelines. Should be raised as per CPCB guidelines norms
	Overflow – no indication system installed- No Automation of water filling -Wastage of water as well as energy
	Live Switch board hanging near wash basins in Evening college Boys Toilet-Shock hazard

	Low VOC paint and putty used-Good Point
	Only one dust bin
	Boys' toilet not Marked-Permanent toilet signages should be provided
	Only one dust bin-Segregation of waste at source is required to be implemented.
	Evening college Staircase bent abnormally causing obstruction. This is required to be corrected with profiling to avert injury to user in case of any emergency

	Maximum Drinking water taps are push type-It is a very good step for avoiding wastage of water
	Perfect coloured dust bins. Need to be replicated at all other locations also
	Signage outside Library-Good Point encouraging signage put for motivation of students.
	Signage above drinking water taps-Water conservation
	Rainwater recharging pipes from garden to pit

	Rainwater recharging pipes from garden to pit
	Signage in toilet-Awareness and sensitization for users.

Annexure-B-Excerpts from Energy Conservation Building Code-2017

Table 4-6 Roof Assembly U-factor (W/m².K) Requirements for SuperECBC Building

	Composite	*Hot and dry*	*Warm and humid*	*Temperate*	*Cold*
All buildings types	0.20	0.20	0.20	0.20	0.20

4.3.1.1 Vegetated and Cool Roof

All roofs that are not covered by solar photovoltaics, or solar hot water, or any other renewable energy system, or utilities and services that render it unsuitable for the purpose, shall be either cool roofs or vegetated roofs.

(a) For qualifying as a cool roof, roofs with slopes less than 20° shall have an initial solar reflectance of no less than 0.70 and an initial emittance no less than 0.75. Solar reflectance shall be determined in accordance with ASTM E903-96 and emittance shall be determined in accordance with ASTM E408-71 (RA 1996).

(b) For qualifying as a vegetated roof, roof areas shall be covered by living vegetation of >50 mm high.

Annexure-C-Lux Level of Rooms

Detail of Lux Level at R.K.S.D.(P.G.) College, Kaithal

Sno	Location	Minimum Lux	Maximum Lux	Average Lux	Remarks
1	Zoology Department at 9.30 AM	171	183	177	Low
3	Chemistry Lab - I Room no - 39	98	135	116.5	Very Low
4	Chemistry Lab Chemical Storeroom no - 40	38	125	81.5	Very Low
5	Physics Lab - II Room no - 42	48	145	96.5	Very Low
6	Computer Lab - III Room no - 53	55	163	109	Very Low
8	Electronics Lab - II Room no - 28	134	180	157	Very Low
9	Classroom no - 3	118	145	131.5	Very Low
10	Classroom no - 14	32	135	83.5	Very Low
11	Library	95	264	179.5	Low
12	Reading Room	450	651	550.5	Satisfactory
14	Evening College Classroom - 307	98	145	121.5	Very low
15	Evening College Staff Room	372	492	432	Satisfactory
16	Evening College Principal Room	145	340	242.5	Satisfactory
17	Evening College MP Hall	140	405	272.5	Satisfactory
18	Evening College Computer Lab	145	403	274	Satisfactory
19	Evening College Corridor	18	95	56.5	Very low
20	Canteen	85	160	122.5	Very low
21	Principal Room	230	320	275	Satisfactory
22	Admin. Office	280	410	345	Satisfactory
23	Chairman Office	275	395	335	Satisfactory
24	Tagore Bhawan Classroom no-111	110	168	139	Low
25	Tagore Bhawan Classroom no-118	116	210	163	Low
26	Diamond Jubilee Bhawan Classroom no-406	124	195	159.5	Low
27	Diamond Jubilee Bhawan Classroom no-418	119	216	167.5	Low
28	B.Ed. Principal Room	164	243	203.5	Low
29	B.Ed. Classroom no-203	121	187	154	Low

ANNEXURE-D-STANDARD FOR WATER REQUIREMENT

Table 1 Water Requirements for Buildings Other than Residences
(*Clause* 4.1.2)

Sl No.	Type of Building	Domestic Per Day litre	Flushing Per Day litre	Total Consumption Per Day litre
(1)	(2)	(3)	(4)	(5)
i)	Factories including canteen where bath rooms are required to be provided	30 per head	15 per head	45 per head
ii)	Factories including canteen where no bath rooms are required to be provided	20 per head	10 per head	30 per head
iii)	Hospital (excluding laundry and kitchen) (*see* Note 2):			
	a) Number of beds not exceeding 100	230 per head	110 per head	340 per head
	b) Number of beds exceeding 100	300 per head	150 per head	450 per head
	c) Out patient department (OPD)	10 per head	5 per head	15 per head
iv)	Nurses' homes and medical quarters	90 per head	45 per head	135 per head
v)	Hostels	90 per head	45 per head	135 per head
vi)	Hotel (up to 3 star) excluding laundry, kitchen, staff and water bodies	120 per head	60 per head	180 per head
vii)	Hotel (4 star and above) excluding laundry, kitchen, staff and water bodies	260 per head	60 per head	320 per head
viii)	Offices (including canteen)	25 per head	20 per head	45 per head
ix)	Restaurants and food court including water requirement for kitchen:			
	a) Restaurants	55 per seat	15 per seat	70 per seat
	b) Food court	25 per seat	10 per seat	35 per seat
x)	Clubhouse	25 per head	20 per head	45 per head
xi)	Stadiums	4 per head	6 per head	10 per head
xii)	Cinemas, concert halls and theatres and multiplex	5 per seat	10 per seat	15 per seat
xiii)	Schools/Educational institutions:			
	a) Without boarding facilities	25 per head	20 per head	45 per head
	b) With boarding facilities	90 per head	45 per head	135 per head
xiv)	Shopping and retail (mall)			
	a) Staff	25 per head	20 per head	45 per head
	b) Visitors	5 per head	10 per head	15 per head
xv)	Traffic terminal stations (*see* Notes 3 and 4)			
	a) Airports	40 per head	30 per head	70 per head
	b) Railway stations (Junctions) with bathing facility	40 per head	30 per head	70 per head
	c) Railway stations (Junctions) without bathing facility	30 per head	15 per head	45 per head
	d) Railway Stations (Intermediate) with bathing facility	25 per head	20 per head	45 per head
	e) Railway Stations (Intermediate) without bathing facility	15 per head	10 per head	25 per head
	f) Interstate bus terminals	25 per head	20 per head	45 per head
	g) Intrastate Bus Terminals/Metro Stations	10 per head	5 per head	15 per head

NOTES

1 For calculating water demand for visitors, consumption of 15 litre per head per day may be taken.

2 The water demand includes requirement of patients, attendants, visitors and staff. Additional water demand for kitchen, laundry and clinical water shall be computed as per actual requirements.

3 The number of persons shall be determined by average number of passengers handled by stations, with due considerations given to the staff and vendors who are using these facilities.

4 Consideration should be given for seasonal average peak requirements.

5 The hospitals may be categorized as Category A (25 to 50 beds), Category B (51 to 100 beds), Category C (101 to 300 beds), Category D (301 to 500) and Category E (501 to 750 beds).

Annexure-E-Handling and disposal of CFL's and Fluorescent tubes

Disposal of Fluorescent tubes -Guidelines

Consumer Level:

As per the present observed practice at consumer level in the society at large, often, the used lamps are collected by the kabari from the households and collectively handed over to the glass recyclers for the recovery of glass material.

This is all operative in a highly unorganized sector. It has, also, been observed that, the used lamps are thrown in the garbage bins and finally into the municipal garbage dumpsites, contaminating air, water and soil. Most of the used lamps are broken either at transit solid waste bins (provided by local civic authority) or broken during the transport to the final disposal site.

A portion of the mercury, in vapor form, is released into the air, whereas rest of the mercury is released onto the soil with further possibility of getting into the surface and/or ground water bodies through the leachate from soil.

Establishment Level - Handling of Used/Broken Fluorescent Lamps (FLs): The consumers may handle and dispose the used lamps as described below: Domestic Consumers:

(i) The consumer must ensure that (s)he does not throw used lamps in the general trash bin but hands them over (in a properly packed form) to a kabari (an individual) or a collection agency identified by an authorized Lamp Recycling Unit for proper recycle / disposal of used FLs.

(ii) The used intact FLs may be stored either in the same boxes in which new lamps are brought or other boxes of similar size. They should be stored upright. The due precaution may be taken while packing more than one used lamp, so as not cause the possibility of breakage during the storage and transportation.

(iii) Even, the broken FLs, after due clean up may be handed over for safe recycling and disposal.

Here are some guidelines for cleaning up a broken CFL:

(i) Open a window and leave the room (restrict access) for at least 15 minutes. If you have fans, place the fans in the windows and blow the air out of the room. Note: If the room has no windows, open all doors to the room and windows outside the room and use fans to move the air out of the room and to the open windows.

(ii) Remove all materials you can without using a vacuum cleaner

(iii) Wear disposable rubber gloves, if available (do not use your bare hands) • Carefully scoop up the fragments and powder with stiff paper or cardboard

(iv) Wipe the area clean with a damp paper towel or disposable wet wipe

(v) Sticky tape (such as duct tape) can be used to pick up small pieces and powder

(vi) Place all cleanup materials in a plastic bag and seal it, and then place in a second sealed plastic bag, dispose it properly and wash your hands after disposing of the bags.

(vii) The first time you vacuum the area where the bulb was broken, remove the vacuum bag once done cleaning the area (or empty and wipe the canister) and put the bag and/or vacuum debris, as well as the cleaning materials, in two sealed plastic bags in the outdoor trash or protected outdoor location for normal disposal.

User Awareness: All the consumers, individual domestic consumers and bulk consumers (offices, institutions, large residential complexes, etc.) should get fully aware about the potential health impact of mercury-bearing lamps, through audio-visual media and the product leaflets. The precautions, to be taken while cleaning up the broken FLs should, also, be known to the consumers. As a part of such awareness programs, the consumers, even at individual level, are expected to participate actively with constructive suggestions and provide the feedback, for the overall success of mercury management in fluorescent lamp

Collection: The collection of used lamps may be done mainly by two ways: (i) Collection of used lamps (FLs) from bulk consumers may either be arranged by the management of above set-up (institutions, etc.) for direct disposal to LRU or by the LRU which may arrange to pick up used lamps from such collection sites through an identified collection agency. (ii) Collection of used lamps (FLs) from individual domestic consumer may be arranged by the LRU, either through kabaris (individuals appointed for the purpose by LRU) or an identified collection agency for door-to-door pickup. Transportation: (i) The Handler (Kabari or representative of LRU) of used FLs in transit should take care of selection of proper vehicle and carriage so as to minimize breakage of used FLs.

(ii) There should not be any intermediate transfer of materials in the transit stage. The collected used FLs should be straight transported to the LRF for further processing (iii) The Handler should be trained to take care of mercury spills, if any, that takes place during the journey to LRU.

Annexure-F-Limits of Sound level as per NBC-2016

Sl No.	Sound Level (Slow Response) dBA	Time Permitted, *T* h : min
(1)	(2)	(3)
i)	85	16:00
ii)	86	13:56
iii)	87	12:08
iv)	88	10:34
v)	89	9:11
vi)	90	8:00
vii)	91	6:58
viii)	92	6:04
ix)	93	5:17
x)	94	4:36
xi)	95	4:00
xii)	96	3:29
xiii)	97	3:02
xiv)	98	2:50
xv)	99	2:15
xvi)	100	2:00
xvii)	101	1:44
xviii)	102	1:31
xix)	103	1:19
xx)	104	1:09
xxi)	105	1:00
xxii)	106	0:52
xxiii)	107	0:46
xxiv)	108	0:40
xxv)	109	0:34
xxvi)	110	0:30
xxvii)	111	0:26
xxviii)	112	0:23
xxix)	113	0:20
xxx)	114	0:17
xxxi)	115	0:15

Annexure-G-Guidelines for Environment Friendly and Green Initiatives

VOC limits of materials

Type of Material	VOC Limit (g/L less water)
Paints	
Non- Flat (Glossy) paint	150
Flat (Mat) paint	50
Anti- corrosive/ anti-rust paints	250
Varnish	350
Adhesives	
Glazing adhesives	100
Tiles adhesives	65
Wood adhesive	30
Wood flooring adhesive	100

Minimum Ventilation Rates in Various Functional Zones*

Occupancy Category	People Outdoor Air Rate	Area Outdoor Air Rate
	Cfm/person	Cfm/ sq.ft
Correctional Facilities		
Dayroom, Guard station	5	0.06
Booking/ waiting	7.5	0.06
Education Facilities		
Daycare (through age 4), daycare sickroom, Art Classroom, science laboratories, college laboratories, wood, metal shop	10	0.18
Classrooms (ages 5-8), (age 9+), computer lab, media centre	10	0.12
Lecture Room/ hall (fixed seating)	7.5	0.06
Music/ theater/ dance,	10	0.06
Multi use assembly	7.5	0.06
Food & Beverages Services		
Restaurant dining rooms/ cafeteria/ fast food dining/ Bars/ Cocktail Lounges	7.5	0.18
General		
Break Rooms, Coffee stations, conference/ meeting	5	0.06
Corridors	-	0.06
Storage Rooms	-	0.12
Hotels, Motels, Resorts, Dormitories		
Bedroom/ living room, barracks sleeping areas	5	0.06
laundry rooms	5	0.12
Lobbies/ prefunction	7.5	0.06
Multipurpose assembly	5	0.06

Occupancy Category	People Outdoor Air Rate	Area Outdoor Air Rate
	Cfm/person	Cfm/ sq.ft
Office Building		
Office Spaces, Reception Areas, Telephone, data entry, Main entry Lobbies	5	0.06
Electrical Equipment rooms	-	0.06
Elevator machine rooms	-	0.12
Pharmacy (prep area)	5	0.18
Photo Studios	5	0.12
Shipping/ receiving	-	0.12
Telephone closets	-	0.00
Transportation waiting	7.5	0.06
Warehouses	-	0.06
Public Assembly Spaces		
Auditorium seating area, Place of religious worship, Courtrooms, Legislative Chambers, Lobbies	5	0.06
Libraries	5	0.12
Museums (children's)	7.5	0.06
Museum/ galleries	7.5	0.06
Retail		
Sales	7.5	0.12
Mall common Areas	7.5	0.06
Barber Shop	7.5	0.06
Beauty & nail salons	20	0.12
Pet Shops (animal areas)	7.5	0.18
Super Market, Coin operated Laundries	7.5	0.06

Occupancy Category	People Outdoor Air Rate	Area Outdoor Air Rate
	Cfm/person	Cfm/ sq.ft
Sports & Entertainment		
Sports arena (Play Area), Gym, stadium (play area)	-	0.30
Spectator area	7.5	0.06
Swimming (pool & deck)	-	0.48
Disco/dance floor/ health club/ aerobics room/ weight rooms	20	0.06
Bowling alley (seating)	10	0.12
Gambling casinos/ game arcades	7.5	0.18
Stages, studios	10	0.06

* *Total outdoor air flow in functional zone* =

$$\left\{ \begin{array}{c} \textit{Outdoor air flow rate required per person as per the above table} \\ \times \\ \textit{Zone population} \end{array} \right\} + \left\{ \begin{array}{c} \textit{Outdoor air flow rate required per unit area as per the above table} \\ \times \\ \textit{Net occupiable zone area} \end{array} \right\}$$

ANNEX-H-LIST OF PLANTATIONS

Inventory of Trees		
RKSD COLLEGE, KAITHAL		
Park No. 1		
1	Bel Pater	1
2	Siris	2
3	Ficus	8
4	Golden Brush	3
5	Tecoma	3
6	Gurhal	2
7	Fox Tail Palm	4
Park No. 2		
1	Traveller Palm	1
2	Amaltas	1
3	Ficus	13
4	Golden Brush	10
5	Champa	2
6	Gurhal	1
7	Mor Panki	4
8	Rose	45
9	Kadam	1
Park No.3		
1	Mango	1
2	Traveller Palm	3
3	Jammun	1
4	Jatropha	4
5	Gurhal	6
6	Savani	2
7	Raat Ki Rani	1
8	Rose	25
9	Kadam	1
10	Kusum	1

Park No. 4		
1	Bottle Palm	10
2	Gulmohar	4
3	Ashoka	8
4	Traveller Palm	4
5	Fox Tail Palm	12
6	Ficus	1
7	Neem	1
8	Gurhal	7
9	Champa	8
10	Saraka	1
11	Pilkhan	1
Park No. 5		
1	Bottle Palm	8
2	Burgad	1
3	Pilkhan	2
4	Ashoka	10
5	Gulmohar	2
6	Fox Tail Palm	8
7	Sisham	2
8	Kachnar	1
9	Kadam	3
10	Papdi	2
11	Gurhal	4
12	Jatropha	3
13	Ficus	5
14	Kachnar	1
Park No.6		
1	Gulmohar	14
2	Jammun	10
3	Sagwan	6
4	Altronia	6
5	Bargad	4

6	Papdi	8
7	Siris	3
8	Neem	5
9	Sisham	5
10	Amaltas	4
11	Amla	1
12	Arjun	2
13	Jammun	1
14	Citrus	2
15	Kaner	16
16	Chandni	16
17	Ficus	44
18	Motia	7
19	Champa	3
20	Fox Tail Palm	15
21	Washingtonia Palm	25
22	Tecoma	10
23	Peepal	1
24	Pilkhan	15
From Gate No. 1 to Library		
1	Molsery	4
2	Pilkhan	4
3	Gulmohar	2
4	Kadam	4
5	Silverok	3
6	Neem	4
7	Ashoka	20
8	Kusum	7
9	Champa	3
10	Tecoma	1
11	Golden Brush	1
12	Deg	1
13	Amrood	2

Stadium		
1	Alstronia	15
2	Seejan	10
3	Gulmohar	30
4	Molsery	10
5	kadam	20
6	Ashoka	44
7	Jakruda	32
8	Bottle Palm	18
9	Bel Pater	2
10	Traveller Palm	2
11	Silverok	12
12	Siris	5
13	Neem	5
14	Kachnar	15
15	Amaltas	15
16	Jammun	10
17	Sagwan	8
18	Bargad	2
19	Papdi	20
20	Sisham	9
21	Amla	4
22	Arjun	5
23	Nibbu	2
24	Fox Tail Palm	20
25	Washingtonia Palm	25
26	Peepal	2
27	Pilkhan	20
28	Kusum	7
29	Deg	4
30	Guava	5
31	Traveller Palm	19

School		
1	Ashoka	6
2	Gulmohar	2
3	Jagruda	2
4	Altronia	2
5	Sisham	2
6	Deg	1
7	Silverok	2
8	Amla	1
9	Champa	2
10	Ficus	32
11	Bottle Palm	1
12	Chandni	8
13	Gurhal	5
14	Kadam	1
15	Harsinga	1
16	Papdi	1
17	Neem	1
18	Kadi patta	1
Stadium		
1	Sisham	5
2	Jagruda	20
3	Neem	3
4	Papdi	13
5	Deg	4
6	Kapnar	5
7	Amaltash	5
8	Champa	8
9	Bargad	1
10	Shatoot	1
11	Silverok	4
12	Gulmohar	5
13	Sejain	1
14	Kadam	2
15	Pilkhan	2
16	Pepal	1
17	Amrood	9
18	Anaar	5
19	Savani	15
20	Traverlerpalm	4
21	Yellow Falap	9
	Total Trees in the campus:	**1124**

Annexure-I-List of hazardous Chemicals used in Chemistry lab at UG level

1. Concentrated Sulphuric Acid
2. Concentrated Hydrochloric Acid.
3. Concentrated Nitric Acid
4. Bromine
5. Benzyl Chloride
6. Benzaldehyde
7. Benzene
8. Nitrobenzene