

**ENVIRONMENT, AND GREEN AUDIT
REPORT
For
BHAGAT PHOOL SINGH MAHILA
VISHWAVIDYALAYA
KHANPUR KALAN, HARYANA.**



Prepared by: -

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BEE ACCREDITED NUMBER : AEA 023**

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ACKNOWLEDGEMENT

We thank management of **BHAGAT PHOOL SINGH MAHILA VISHWAVIDYALAYA** for awarding the Green Audit, Energy and Environment study at their facility at **KHANPUR KALAN, SONEPAT** to NIN Energy India Private Limited. This report is the result of Energy, Green, Environment audit conducted at BHAGAT PHOOL SINGH MAHILA VISHWAVIDYALAYA, KHANPUR KALAN, SONEPAT from 25-07-2022 to 27-07-2022.

We wish to thank officials of BHAGAT PHOOL SINGH MAHILA VISHWAVIDYALAYA, KHANPUR KALAN, SONEPAT for their support during the audit for successful conduct of the audit.

For NIN ENERGY INDIA PRIVATE LIMITED



(B. SENTHILKUMAR)

DIRECTOR

ACCREDITED ENERGY AUDITOR BY BUREAU OF ENERGY EFFICIENCY

(AEA 023)

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List of Abbreviations

EE	Energy Efficiency
EEM	Energy Efficiency Measure
EER	Energy Efficiency Ratio
FTL	Fluorescent T8
CFL	Compact Fluorescent Lamps
kWh	Kilo Watt hour
LED	Light Emitting Diode
LT	Low Tension (below 120 kW)
TANGEDCO	Tamil Nadu Generation and Distribution Corporation
tCO ₂	Tonne of Co ₂

1. INTRODUCTION

1.1 About University

Bhagat Phool Singh Mahila Vishwavidyalaya is the 'dream come true' of Bhagat Phool Singh Ji, who established a Gurukul for girls at Khanpur Kalan in 1936. Even after the demise of Bhagat Phool Singh, his equally dynamic daughter Subhashini Ji not only took control of Gurukul but worked vigorously in expanding the Gurukul in terms of its various constituent institutions like BPS Memorial Girls' College (1967), BPS College of Education (1968), MSM Ayurvedic College (1973), BPS Mahila Polytechnic (1984), TI G Bhainswal Kalan (1999) and PSD Girls' Law College (2003).

The State Government took cognizance and upgraded the erstwhile Gurukul to the status of a university exclusively for women in August 2006 and christened it as Bhagat Phool Singh Mahila Vishwavidyalaya, which happens to be the first State Women University of North India. Since then BPSMV has undergone a complete transformation 75 years old Gurukul started with only three girls has turned into a modern university with approximately 7000 girls on its rolls studying in various programmes.

BPSMV has the following block/buildings:

- Teaching Block-I K.G.S. S School
- Teaching Block-II Campus School
- Administration Block BPS ITTR
- New Guest House BPS IHL College
- Old Guest House LRC
- V.C. Residence U.G.C
- Registrar Residence Polytechnic College
- Hostel Chief Warden Law College
- Central Library Hotel Management
- Ayurvedic Block Hospital
- Sports Complex

Beside this BPSMV has two Regional Centres namely Kharal (Jind) and Krishna Nagar (Rewari) and Department of Pharmaceutical Education and Research located at South Campus Bhainswal Kalan.

Vision Statement of University

The BPS Mahila Vishwavidyalaya has been set up with a dream, the dream to emancipate women. The dream is to ensure that women gain an equal status in the society of today through pursuit of knowledge and realization of their rights and responsibilities.

The vision statement of the University, each word of which has been carefully framed, reflects this dream. Dreams need proper guidance and careful planning to become a reality. In order to ensure that the dream of BPS Mahila Vishwavidyalaya transforms into a living reality, the University has invited luminaries from different fields of knowledge. These luminaries are renowned experts in their respective fields and recipients of various National and International Awards for exemplary work. The University proposes to use their expertise and knowledge to fulfil the vision which it has seen for women. It is a group of seven experts and forms the "Vision Group" of the University.

The members of the group are **Prof. M. Anandakrishna**, Former Vice-Chancellor, Arramalai University, Chennai, **Prof. Ranbir Singh**, Vice-Chancellor, National Law University, Delhi, **Prof. S.P.Thyagarajan**, Former Vice-Chancellor, University of Madras, **Prof. Furquan Qumar**, Vice-Chancellor, Central University, Himachal Pradesh, **Prof. Kapil Kapoor**, Former Pro-Vice-Chancellor, JNU, Delhi

GENERAL DETAILS		
S. No	Description	Details
1	Name of the college	Bhagat Phool Singh Mahila Vishwavidyalaya
2	Address	Bhagat Phool Singh Mahila Vishwavidyalaya, Khanpur Kalan (Sonapat), Haryana-131305 www.bpswomenuniversity.ac.in
3	No of building blocks	40
4	No of departments and its details	22
5	No of students	5865
6	No of Teaching staff	258
7	No of Non-Teaching staff	232
8	No of Guest lectures	15
9	No of Classrooms	147 (Classrooms) +17 (Seminar Hall)
10	No of Labs	83
11	No of Smart classrooms	19
12	Courses available in the University	74
13	No of hostel building	11
14	Wastewater treatment details	STP of 3 MLD capacity is working
15	No of solar streetlights available in the campus	Nil

No. of Building Blocks details:

S. No	Name of the Building	Year of Construction	Source of Funding	No of Rooms	No. Of Labs
1	Hostel No. 01	1973-75, 1988-89, 2003-04	Donation	90	0
2	Hostel No. 02	2002-03	Donation	20	0
3	Hostel No. 03	1998-99	Donation	44	0
4	Hostel No. 04	1968-69	Donation	71	0
5	Hostel No. 05	1975-76	Donation	81	0
6	Hostel No. 06	2001-02	Donation	20	0
7	Hostel No. 10	2001-02	State Govt. Grant	54	0

S. No	Name of the Building	Year of Construction	Source of Funding	No of Rooms	No. Of Labs
8	Hostel No. 12	2007 to 09	State Govt. Grant	311	0
9	Hostel No. 13	2007 to 09	State Govt. Grant	311	0
10	Hostel No. 14	2007 to 09	State Govt. Grant	311	0
11	Research Scholar Hostel	2015	U.G.C. + State Govt. Grant	40	0
12	Academic Staff Hostel	2015	U.G.C. + State Govt. Grant	19	0
13	Degree College Hostel	2015	U.G.C. + State Govt. Grant	13	0
14	Kanya Gurukul Sen. Sec. School	Ground Floor - 1956-57 First Floor -1976-77 Second Floor- 2004-05	Donation	52	12
15	BPS IHL (Institute of Higher Learning)	Ground Floor - 1965-66 First Floor -1974-75	Donation	0	0
16	BPS ITTR	1997-98	Donation	17	7
17	Learning Resource Centre (LRC)	2003-04	Donation	4	8
18	Central Library	1995-96	Donation	5	2
19	MSM Institute of Ayurveda				
i	College Building	Ground Floor - 1977-78 First Floor -1998-99	Donation	0	0
ii	Pharmacy Building	1998-99	Donation	0	3
iii	Panchkarma	2003	Donation	10	0
iv	New Hospital Building	Ground Floor - 2005 First Floor - 2008	Donation	0	0
20	BPS Mahila Polytechnic	1998-99	Donation	12	14
21	PSD Institute of Law	Ground Floor - 2003-04 First Floor -2008	Donation	15	1
22	Shopping Centre	2003	Donation	11	0
23	Polytechnic Staff Quarter (12 Nos.)	1999	Donation	36	0
24	Old Mahasabha Staff Quarter (26 Nos.)	2003	Donation	52	0
25	BAMS Staff Quarter (14 Nos.)	1998-99, 2003-04	Donation	28	0
26	Degree college Staff Quarter (10 Nos.)	Not known	Donation	20	0
27	ITTR Staff Quarter (14 Nos.)	Not known	Donation	28	0

S. No	Name of the Building	Year of Construction	Source of Funding	No of Rooms	No. Of Labs
28	4 th Class Staff Quarter (54 Nos.)	Not known	Donation	54	0
29	Teaching Block – I	2007-08	Donation	49	2
30	Teaching Block –II	2007-08	Donation	23	27
31	Campus School	2007-08	Donation	20	3
32	Prof. Quarter (15 Nos.)	2007-08	Donation	60	0
33	Associates Prof. Quarter (32 Nos.)	2007-08	Donation	96	0
34	Assistant Prof. Quarter (48 Nos.)	2007-08	Donation	96	0
35	Guest House	2008	Donation	17	0
36	Vice-Chancellor Residence	2007 to 09	Donation	6	0
37	Administrative Block	2011 to 14	Donation	43	0
38	B. Sc Hospitality Lab	2015	Donation	0	4
39	Construction of Student Activity Centre	2018	RUSA Grant	17	0
40	Construction of Sports Complex	2021	State Govt. Grant	20	0

Details of Programmes:

S. No.	Department/Institute/Centre	Programmes offered
1	Department of Foreign Languages	PhD, M.A., M.A. (Integrated)
2	Department of Laws	PG Diploma in FLT (German, French & Russian); Diploma in FLT, (German, French and Russian); Certificate of Proficiency in (German, French & Russian), Advanced Diploma of Proficiency in (German, French and Russian)
3	Department of Management Studies	PhD, LLM, B.A.- LLB, BBA- LLB, PG Diploma in CyberLaws, PG Diploma in Insurance Laws, PG Diploma in Human Rights, Certificate Course in Human Rights
4	Department of Commerce	PhD (Management), MBA, MBA (Lateral Entry), BBA
5	Department of Hotel Management	PhD, M. Phil., M. Com., B.Com. (Hons.)
6	Department of Foreign Languages	MHM, BHM
7	Department of CSE & IT	PhD (CSE), M. Tech., CSE (Network Security), B.Tech. (CSE, IT)
8	Department of ECE	PhD, (ECE) B. Tech. (ECE)
9	Department of Fashion Technology	M. Tech. (FT-FG), B. Tech. (FT)
10	Department of Basic & Applied Sciences	PhD (Mathematics), M.Sc. (Mathematics), M.Sc. (Physics), M.Sc. (Chemistry)
11	Department of Social Work	PhD (Social Work), M. A
12	Department of Economics	PhD, M.A. (Eco.), B.A. (Hons)
13	Department of History & Archaeology	M.A.

S. No.	Department/Institute/Centre	Programmes offered
14	Department of Political Science	M.A.
15	Department of Geography	M. Sc
16	Department of Pharmaceutical Education & Research	PhD (Pharmacy), (B. Pharmacy, B. Pharmacy (Lateral Entry)
17	Department of Physical Education	M.P.E.S., B.P.E.S.
18	BPS Institute of Teacher Training & Research	PhD, M. Phil, M.Ed., M.A. (Education), B.Ed., D.Ed.
19	MSM Institute of Ayurveda	Bachelor of Ayurveda Medicine and Surgery, Diploma in Ayurvedic Pharmacy D. Pharma (Ayu.), Diploma in Ksharsutra Therapy (D.K.T.), Diploma in Panchkarma Therapy (D.P.T.) Diploma in YOGA Science
20	BPS Institute of Higher Learning	PhD (F&N), M. Sc (Home Science – F&N), B.A., B. Sc (Computer Science, Home Science, Medical & Non-Medical)
21	Regional Centre at Kharal (Jind)	M.A. English, M.A. Political Science, B.A., B.Sc.(Non-Medical), B.A. Sanskrit (Hons.), B.Com. (Hons.)
22	Regional Centre at Krishana Nagar (Rewari)	M.A. English, B.A., B.Sc. (Non-Medical), B.Com. (Hons.)
23	Centre for Society University Interface and Research	Certificate Courses in Integrated Energy Resource Management, Folk Medicine, Micro Finance Practices & Women, Cooperative Management; ADOP in Folk Medicine & MFP&W; DOP in MFP&W and Folk Medicine
24	Learning Resource Centre	Communication Skills' Training
25	Staff Training and Research Institute for Teaching of English	Teacher Training Programmes for Teachers of English
26	Human Resource Development Centre	In-Service Faculty Development Programmes, Orientation & Refresher Programmes
27	Women's Studies Centre	Research activities on Women
28	BPS Mahila Polytechnic	Diploma in (Computer Science, FT, MLT, ECE, OMCA, Pharmacy, Library Science and Architecture
29	Campus School (Affiliated to C.B.S.E)	Nursery to XII (Arts & Commerce Streams)
30	K.G.S.S. School (Affiliated to BSEH)	Pre-Primary to XII (Commerce & Science Streams)

2. AUDIT TEAM

The Green audit assessment was done by the NIN Energy India private Limited team. Team details are as follows

Name	Designation
Mr. B. Senthil Kumar	Accredited Energy Auditor
Mr. T. Karthikeyan	Certified Energy Auditor
Mr. R. Raj Kannan	Sr. Engineer

3. INVENTORY DETAILS

3.1 Lighting

At Present, campus using the following lights for lighting purpose. The details of the lights with wattage and operating hours are listed below,

Type of light	Watt per Light	Numbers of Lights Installed
LED Bulb	20 W	30
LED Bulb	40 W	10
LED Ceiling Light	36 W	254
LED Panel Light	30 W	22
LED Panel Light	36 W	60
LED Round Light	12 W	61
LED square light	12 W	51
LED Street Light fittings	45 W	176
LED Street Light fittings	90 W	52
LED Street Light fittings	150 W	47
LED Street Light fittings	200 W	36
LED Street Light fittings	60 W	54
LED Street Light fittings	30 W	20
LED Tube Light	18 W	2310
Light Fittings	2 x 14 W	144
Light Fittings	4 x 14 W	596
Tube Light	36 W	136
Tube Lights	1 x 28 W	833
Tube Lights	14 W	1024
Tube Lights	2 x 28 W	263

Lux Details:

Sample Lux details are taken from the campus.

S.NO	Location	Floor	Recommended lux	Lux
1	Teaching Block-2 Design Lab	Second Floor	300	750
2	Teaching Block-2 Room-213	Second Floor	200	900
3	Teaching Block-2 Smart class-214	Second Floor	200	300
4	Teaching Block-2 Fashion Design-311	Third Floor	200	700
5	Teaching Block-2 Room - 331	Third Floor	200	500
6	Teaching Block-2 Computer Science UG -123	First Floor	200	500
7	Teaching Block-2 Library -020	Ground Floor	200	370
8	Campus School - IX Class	Ground Floor	200	500
9	Campus School -Computer Lab	Ground Floor	300	100
10	Campus School - III Class	First Floor	200	560
11	Central Library	Ground Floor	200	440
12	KGSSS-VII A	First Floor	200	300
13	KGSSS-VII B	First Floor	200	400
14	KGSSS-Library	Second Floor	200	300
15	ITTR -Bed. II-year Section -A	Ground Floor	200	54
16	ITTR -Instructional Tech -208	First Floor	200	147
17	ITTR- Computer Lab	First Floor	300	135
18	ITTR- Library	Ground Floor	200	103
19	IHL- Chemistry Lab	Ground Floor	300	57
20	IHL - Library	Ground Floor	200	120
21	IHL -Room No - 5	Ground Floor	200	360
22	IHL -Geography Lab	Ground Floor	300	310
23	LAW- Court Room	Ground Floor	200	500
24	LAW- Room no-7	Ground Floor	200	500
25	LAW- Library	First Floor	200	750
26	LAW-BBA II Year -108	First Floor	200	400
27	MSM- Institute of Ayurveda -Library	First Floor	200	160
28	MSM- Institute of Ayurveda - LT-1 seminar	Second Floor	200	140
29	MSM- Institute of Ayurveda - LT-5	Second Floor	200	360
30	Admin Block - Conference Room	Ground Floor	200	420
31	Admin Block - VC Office	Ground Floor	200	460

Remarks:

It is recommended to add the lighting in low lux areas.

4. SOLAR PANELS

Solar panel survey has been carried out and details as follows:

No of panels	3040
Wattage of each panel, W	330
Total Capacity, kW	1MW
Availability of Net Metering	Yes

The campus has a 1 MW solar power plant at the five different locations.

Teaching block 1	178 kWh
Teaching block 2	198 kWh
LAW College	158.4 kWh
Ayurveda old and new building	145 kWh
Polytechnic Building & Library	66 kWh
Hostel no.5	99 kWh
Hostel no.6	52.8 kWh
B.Ed. college	52.8 kWh
Campus School	52.8 kWh

S. No	Month	Solar Generation unit (A)(KWH)	Solar agency rate @RS. 3.33/-per unit (B)	UHBVN rate@RS.6.87/- per unit (C)	Saving (D)	UHBVN Consumed Unit (E) (As per Bill KWH)	Paid to UHBVN (F)	Solar Energy Generation (Average Per Day)
1	Apr-21	134717	448608	925506	476898	80820	440571	4645
2	May-21	122546	408078	841891	433813	55350	191718	3953
3	Jun-21	119750	398768	822683	423914	62130	378329	3991
4	Jul-21	118398	394265	813394	419129	109830	955883	3819
5	Aug-21	123028	409683	845202	435519	108180	988757	3968
6	Sep-21	105890	352614	727464	374850	105930	830714	3529
7	Oct-21	134547	448042	924338	476296	73650	463369	4340
8	Nov-21	93108	310050	639652	329602	54630	333482	3103
9	Dec-21	92450	307859	635132	327273	121530	956542	2982
10	Jan-22	72618	241818	498886	257068	140490	1126298	4342
11	Feb-22	123678	411848	849668	437820	82110	608195	4417
12	Mar-22	154548	514645	1061745	547100	88800	435328	4985
TOTAL		1395278	4646278	9585561	4939282	1083450	7709186	4006.16

Total Savings = Rs. 4939283/-

Financial Saving in percentage % =51.5283 % Approximately




Solar generation from April 2021 to March 2022 = 1395278/- Units

Total units consumption (Solar + UHBVN) =1395278 + 1083450 =2478728 Units

Consumed / Utilized unit through Solar Energy = 56.29%

Consumed / Utilized unit through UHBVN = 43.71%

Observation:

S. No	Location	Visual Images
1	Teaching Block-2	
2	Teaching Block-2	
3	Net Meter	

5. WATER CONSERVATION MEASURES

5.1 Replacement of normal water taps with water efficient taps

At present, normal water taps are used in the wash basin and showers. It is recommended to change water efficient water taps in the campus which will save 50 % of the water consumption in taps and showers.

S. No	Description	Units	Values
1	Normal water taps flow	LPM	10
2	Water efficient taps flow	LPM	5
3	Water savings	%	50

Cost of the water taps and showers

S. No	Description	Price
1	Water efficient tap nozzle	550
2	Water efficient showers	1200



5.2 Proposal for Installing Drip Water Irrigation System for Trees and Plants

In campus, there are around 13215 plants and Trees were being grown. Water required for the plants and Trees about 1.90 Lac Litres (Approximately). It is highly proposed to install drip water irrigation system in the campus which will save more amount of water.

Note: Only poly house has the drip water Irrigation System.

6. GREEN AUDIT

The main objective of the green audit is to **promote the Environment Management and Conservation in the University Campus**. The purpose of the audit is to identify, quantify, describe, and prioritize framework of Environment Sustainability in compliance with the applicable regulations, policies, and standards.

FAUNAL DIVERSITY:

FAUNA OF BHAGAT PHOOL SINGH MAHILA VISHWAVIDHYALAYA, Khanpur Kalan

S. No	Common Name	Scientific Name
1	Alexandrine Parakeet	<i>Psittacula eupatria</i>
2	Asian Koel	<i>Eudynamys scolopacea</i>
3	Bank Myna	<i>Acridotheres ginginianus</i>
4	Black Drongo	<i>Dicrurus macrocercus</i>
5	Black-rumped Flameback	<i>Dinopium benghalense</i>
6	Black-winged Kite	<i>Elanus caeruleus</i>
7	Brahminy Starling	<i>Temenuchus pagodarum</i>
8	Brown Rockchat	<i>Cercomela fusca</i>
9	Brown-headed Barbet	<i>Megalaima zeylanica</i>
10	Common Chiffchaff	<i>Phylloscopus collybita</i>
11	Common Hoopoe	<i>Upupa epops</i>
12	Common Myna	<i>Acridotheres tristis</i>
13	Common Tailorbird	<i>Orthotomus sutorius</i>
14	Common Woodshrike	<i>Tephrodornis pondicerianus</i>
15	Coppersmith Barbet	<i>Megalaima haemacephala</i>
16	Eurasian Collared Dove	<i>Streptopelia decaocto</i>
17	Greater Coucal	<i>Centropus sinensis</i>
18	Green Bee-eater	<i>Merops orientalis</i>
19	House Crow	<i>Corvus splendens</i>
20	House Sparrow	<i>Passer domesticus</i>
21	Indian Grey Hornbill	<i>Ocyrceros birostris</i>
22	Indian Peafowl	<i>Pavo cristatus</i>
23	Jungle Babbler	<i>Turdoides striatus</i>
24	Jungle Crow	<i>Corvus culminatus</i>
25	Laughing Dove	<i>Streptopelia senegalensis</i>
26	Lesser white throat	<i>Sylvia curruca</i>
27	Little Minivet	<i>Pericrocotus lansbergei</i>
28	Oriental Magpie Robin	<i>Copsychus saularis</i>
29	Oriental White eye	<i>Zosterops palpebrosus</i>
30	Pariah Kite	<i>Milvus migrans</i>
31	Pied Myna	<i>Gracupica contra</i>

S. No	Common Name	Scientific Name
32	Purple Sunbird	<i>Cinnyris asiaticus</i>
33	Red vented Bulbul	<i>Pycnonotus cafer</i>
34	Red whiskered Bulbul	<i>Pycnonotus jocosus</i>
35	Red-wattled Lapwing	<i>Vanellus indicus</i>
36	Rock Pigeon	<i>Columba livia</i>
37	Rose-ringed Parakeet	<i>Psittacula krameri</i>
38	Rufous Treepie	<i>Dendrocitta vagabunda</i>
39	Scaly breasted Munia	<i>Lonchura punctulata</i>
40	Shikra	<i>Accipiter badius</i>
41	Sind Sparrow	<i>Passer pyrrhonotus</i>
42	Spotted Owlet	<i>Athene brama</i>
43	White throated Kingfisher	<i>Halcyon smyrnensis</i>
44	Yellow legged Green Pigeon	<i>Treron phoenicoptera</i>
45	Yellow Wagtail	<i>Motacilla flava</i>
46	Yellow-throated Sparrow	<i>Petronia xanthocollis</i>

DIVERSITY OF BIRDS IN BHAGAT PHOOL SINGH MAHILA VISHWAVIDHYALAYA

Birds have ecological value as important elements of natural systems. Birds **provide insect and rodent control, plant pollination, and seed dispersal** which result in tangible benefits to people. Bird surveys on campus.



Bank Myna



Eurasian collared Dove



Laughing Dove



House Sparrow



Scaly breasted Munia



Red wattled Lapwing



Spotted Owlet



Indian Peafowl



Common Hoopoe



Alexandrine Parakeet



Indian Silverbill



Jackbin Cuckoo



Brown headed Barbet



Coppersmith Barbet



Jungle Babbler

BUTTERFLIES (JEWELS) OF BHAGAT PHOOL SINGH MAHILA VISHWAVIDHYALAYA

Butterflies are the most fascinating group of insects to humankind, often regarded as flagship species. They are the good bio-indicators of the ecosystem and are very sensitive to changes in the environment.



Common Jay



White Orange Tip



Peacock Pansy



Common Mormon



Common Castor



Common Grass Yellow



Blue Pansy



Indian Palm Bob



Lime Butterfly

FLORA IN BHAGAT PHOOL SINGH MAHILA VISHWAVIDHYALAYA

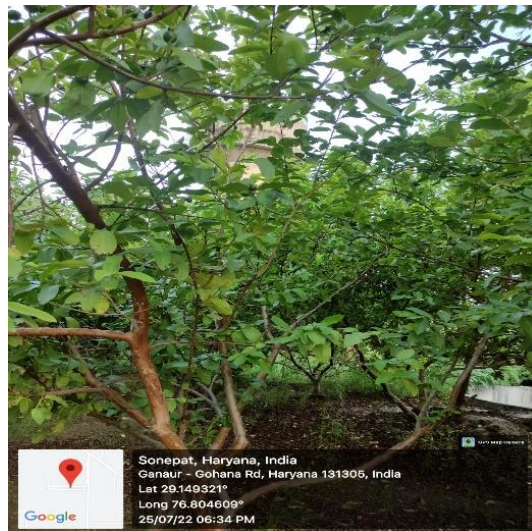
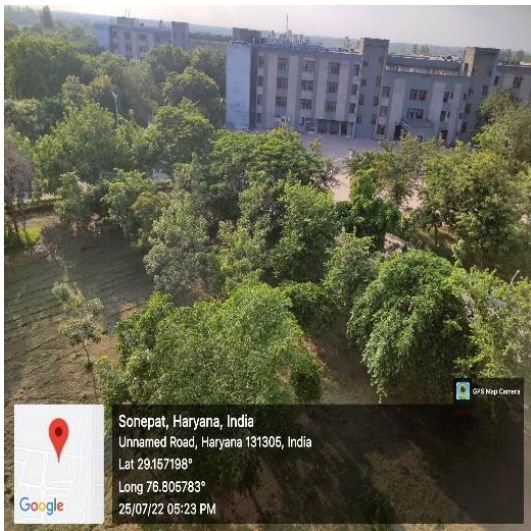
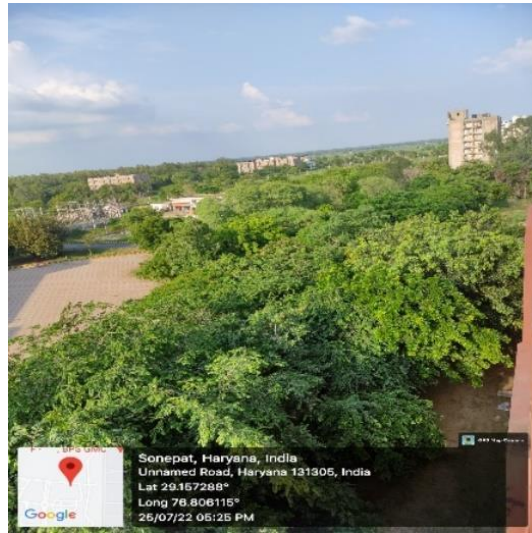
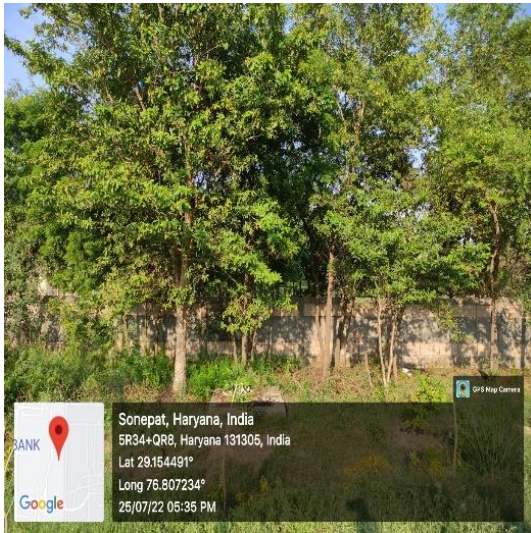
Trees **give off oxygen that we need to breathe**. Trees reduce the amount of storm water runoff, which reduces erosion and pollution in our waterways and may reduce the effects of flooding. Many species of wildlife depend on trees for habitat. Trees provide food, protection, and homes for many birds and mammals.

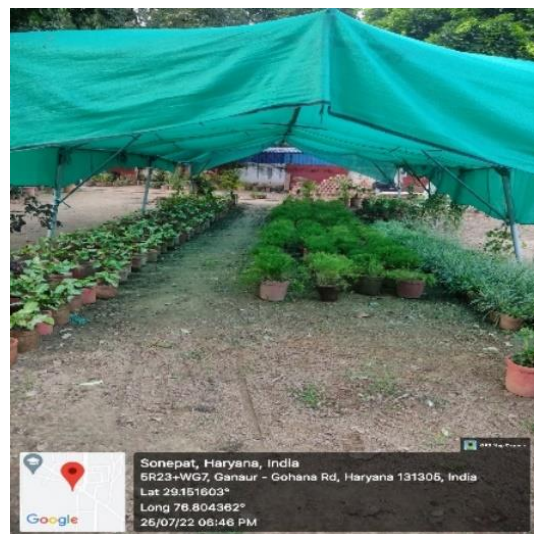
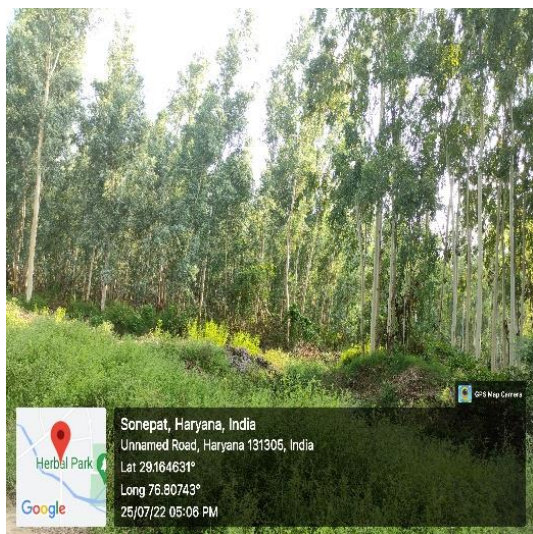
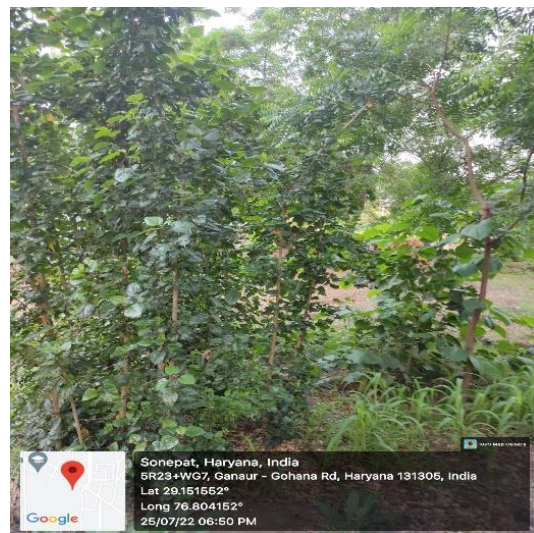
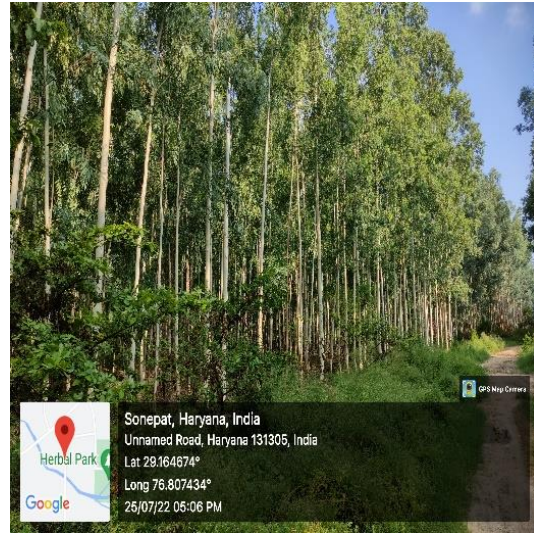
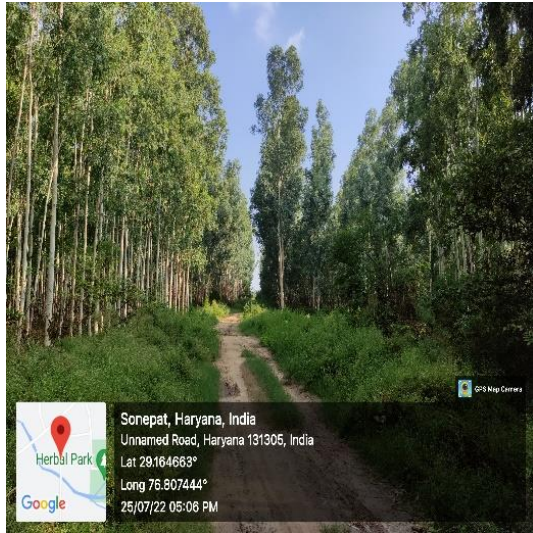
S. No.	Common Name	Scientific Name	Abundance
1	Alestonia	<i>Alstonia scholaris</i>	86
2	Amaltas	<i>Cassia fistula</i>	274
3	Amelia	<i>Leucanthemum superbum</i>	86
4	Amla	<i>Phyllanthus emblica</i>	251
5	Anaar	<i>Punica granatum</i>	15
6	Arjun	<i>Terminalia arjuna</i>	347
7	Ashok	<i>Polyalthia longifolia</i>	534
8	Baheda	<i>Terminalia bellerica</i> Roxb.	1
9	Babul	<i>Acacia nilotica</i>	14
10	Bakain	<i>Melia azedarach</i>	179
11	Banyan	<i>Ficus benghalensis</i>	51
12	Belpatra	<i>Aegle marmelos</i>	15
13	Bougainvillea	<i>Bougainvillea sp.</i>	50
14	Cactus	<i>Cactus sp.</i>	1
15	Chameli	<i>Jasminum officinale</i>	25
16	Champa	<i>Plumeria rubra</i>	100
17	Chandani	<i>Tabernaemontana divaricata</i>	232
18	Cycas	<i>Cycas sp.</i>	20
19	Ficus	<i>Ficus benjamina</i>	98
20	Guava	<i>Psidium guajava</i>	169
21	Gudhal (Hibiscus)	<i>Hibiscus sp.</i>	45
22	Gulmohar	<i>Delonix regia</i>	63
23	Gazania	<u><i>Gazania rigens</i></u>	117
24	Harshingar	<i>Nyctanthes arbor-tristis</i>	2
25	Imli	<i>Tamarindus indica</i>	1
26	Jal	<i>Ficus benjamina</i>	1
27	Jamun	<i>Syzigium cumini</i>	493
28	Jatropha	<u><i>Jatropha cuneata</i></u>	50
29	Kachnar	<i>Bauhinia variegata</i>	50
30	Kadamb	<i>Mitragyna parviflora</i>	7
31	Kadi Patta	<i>Murraya koenigii</i>	15
32	Kaner	<i>Cascabela thevetia</i>	50
33	Kaldara	<i>Amaranthus viridis</i>	82
34	Lasora	<i>Cordia dichotoma</i>	2
35	Lemon	<i>Citrus x Limon</i>	24
36	Mahendi	<i>Lawsonia inermis</i>	3
37	Mahua	<i>Madhuca longifolia</i>	29
38	Mango	<i>Mangifera indica</i>	178

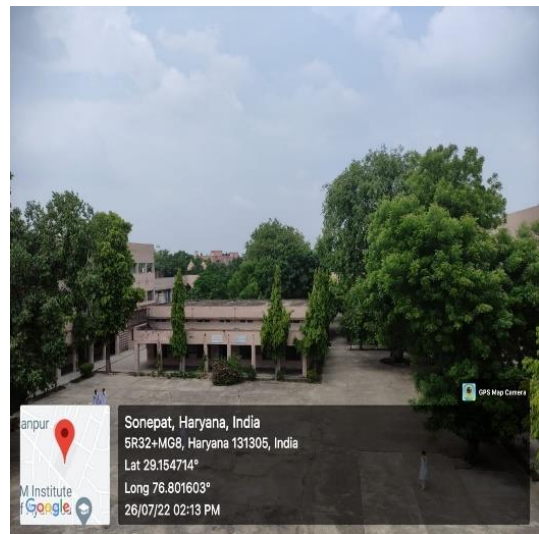
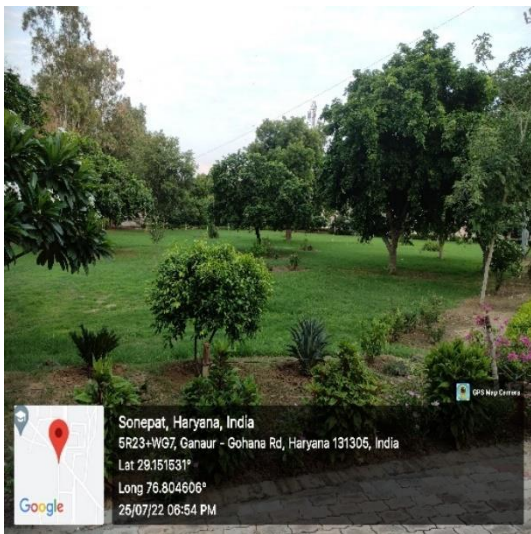
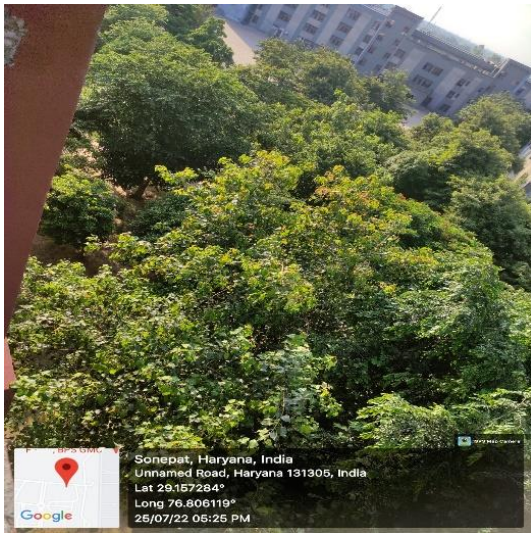
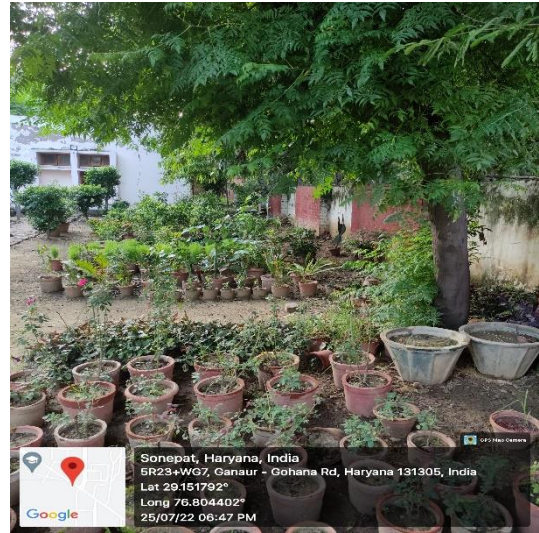
S. No.	Common Name	Scientific Name	Abundance
39	Maulsari	<i>Mimusops elengi</i>	128
40	Mausami	<i>Citrus limetta</i>	50
41	Morpankhi	<i>Thuja orientalis</i>	5
42	Neem	<i>Azadirachta indica</i>	221
43	Papaya	<i>Carica papaya</i>	5
44	Papdi	<i>Holoptelea integrifolia</i>	495
45	Papular	<i>Abelmoschus moschatus</i>	20
46	Peepal	<i>Ficus religiosa</i>	49
47	Pilkhan	<i>Ficus virens</i>	37
48	Rubber Plant	<i>Ficus elastica</i>	5
49	Sahjan	<i>Moringa oleifera</i>	22
50	Sangwan (Teak)	<i>Tectona grandis</i>	86
51	Shatavari	<i>Asparagus racemosus</i>	1
52	Shahtoot	<i>Morus alba</i>	37
53	Sheesham	<i>Dalbergia sissoo</i>	120
54	Siris	<i>Albizia lebbek</i>	10
55	Silver	<i>Leucadendron argenteum</i>	7
56	Tecoma	<i>Tecoma stans</i>	50
57	Anar (Pomegranate)	<i>Punica granatum</i>	17
58	Badberi	<i>Ziziphus jujuba</i>	14
59	Mosambi	<i>Citrus limetta</i>	4

GREENY IN BHAGATH PHOOL SINGH MAHILA VISHWAVIDHYALAYA

A Forest state area of **100 acre** which consists of **44000 Eucalyptus plants**. Some pictures are taken from inside the campus.







Green Campus Award:

The prestigious Award has been jointly instituted by the women’s Agency for Generating Employment (WAGE), Indian Institute of Ecology and Environment (IIEE), Confederation of Indian Universities (CIU), the international Association of Educators for World Peace (NGO Affiliate of United Nations: ECOSOC, DPI, UNICEF, UNESCO), and Clean Up The Earth (CUTE). The recipients of this Award will get full guidance from the sponsoring agencies for maintaining the green campus.



7. WATER MANAGEMENT

The water management system details are as follows.

S. No	Parameters	Response
1	Source of water	Raw water canal based
2	No of Wells	2 nos. Tube well
3	No of motors used	7 nos. at WTP (1 no. = 90BHP, 2 nos. = 50 BHP, 4 nos. = 20BHP) 6 nos. at STP (1 no. 7.5 BHP, 1 no. 10 BHP, 12.5BHP & 3 nos. Air Blower = 10BHP)
4	Overall average water consumption in the institution per day (in litres)	20.90 Lac Ltr.
5	Average drinking water consumption in the hostel per day (in litres)	19.00 Lac Ltr.
6	Average drinking water consumption in the college per day (in litres)	
7	Average Water consumption for washroom per day (in litres)	
8	Average Water consumption for gardening per day (in litres)	1.90 Lac Ltr.
9	Any water wastage/why?	No
10	Faith of wastewater from labs	No
11	Whether wastewater from labs mixed with ground water	No
12	Rainwater harvest available? If yes, Mention number of units	Yes (5 Nos.)
13	Number of rainwater collection sump,	5 Nos.
14	Rainwater Capacity	only ground water recharge well
15	Areas of utilization of rainwater	For Gardening only during raining

7.1 Raw Water Treatment and Distribution

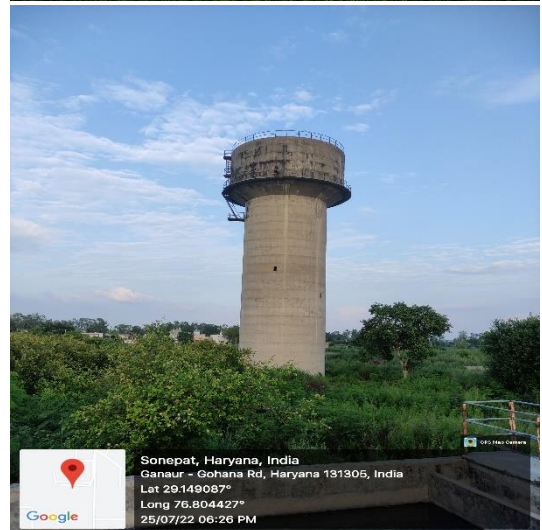
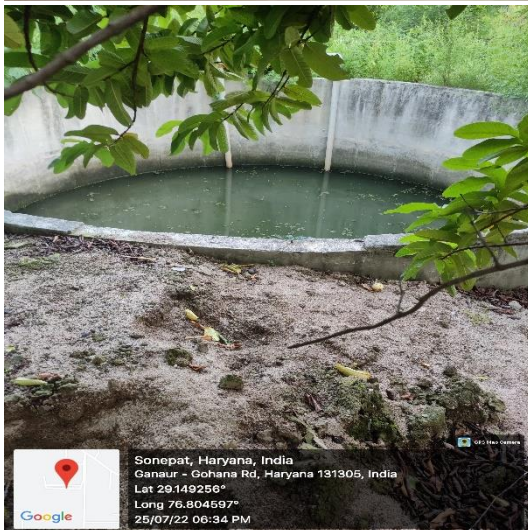
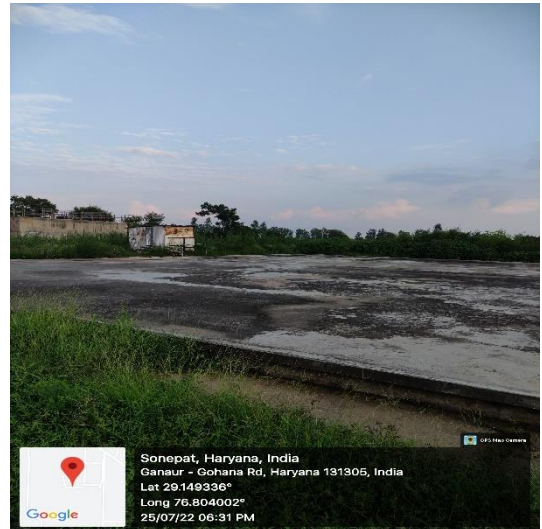
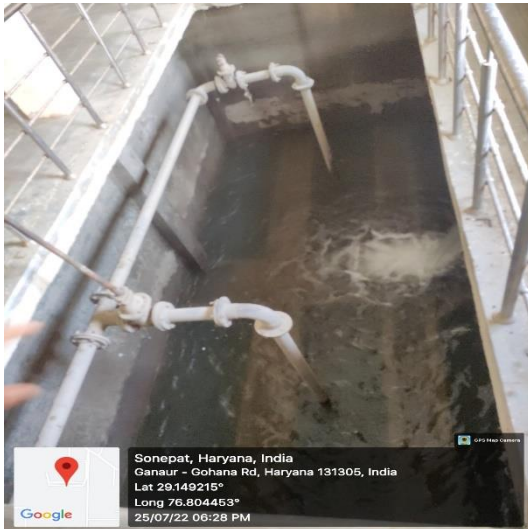
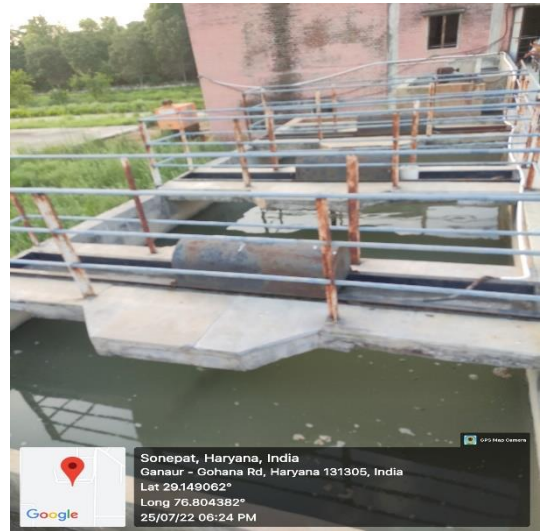
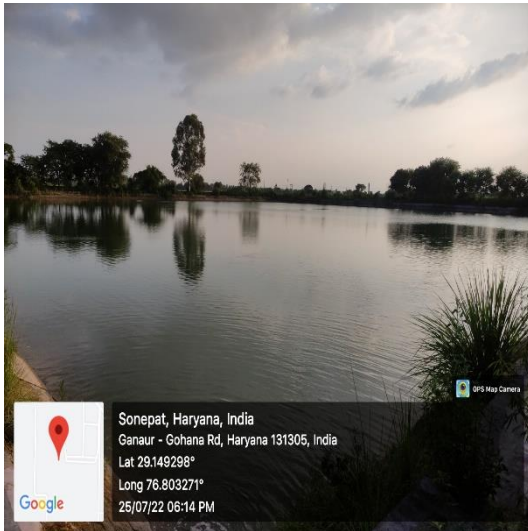
In the university the raw water is taken from the Jawaharlal Nehru canal. There are three Reservoir to store the raw water. In these canal 16 days for working and 24 days for maintenance purpose. Raw Water is treated in traditional method. The primary Treatment process tank was clean 6 months once that waste grit and water was stored in Separate tank.

Raw water treatment process:

1. Collection
2. Screening and straining
3. Chemical addition
4. Coagulation and clarification
5. Sedimentation and clarification
6. Filtration
7. Disinfection
8. Storage
9. Distribution -the water is finally sent to homes via a sophisticated system of pump, tank, pipelines, hydrant, valves etc.

Sr. No.	Description	Qty. Approx. In Ltrs.
1	Total water storage capacity at Water Works	8.80 crore
2	Used by Govt. Medical College (Approx. 40%)	3.50 crore
3	Used by University campus	5.25 crore
4	Average daily usage of water in university (5.25/30 days)	17.50 Lacs
5	Average daily Consumption for Academic, Hostels, Residences etc. (drinking, washroom etc.)	15.50 Lacs
6	Average daily consumption for Garden, Horticulture work etc.	2.00 Lacs
7	Average daily waste water disposal at STP (Approx. 75%)	11.60 Lacs

Location:



7.2 The Detail of water storage tank capacity of buildings wise of BPSMV, Khanpur Kalan:

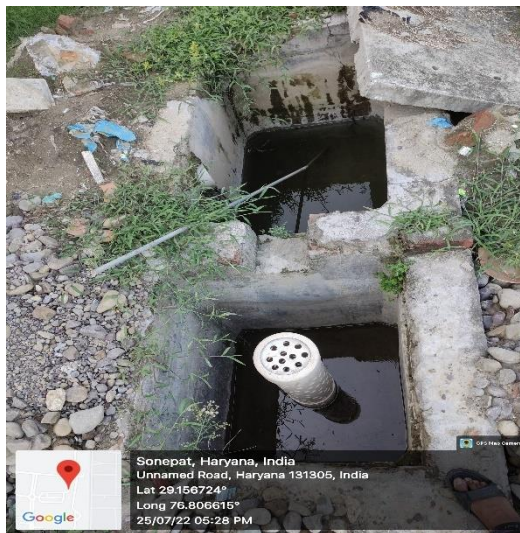
Sr. No.	Name of building	Covered area	Water storage tank capacity	No. of water storage tank	Remarks
1.	Kanya Gurukul Sen. Sec. School	6198.00 Sqm.	2000 Ltr. 1000 Ltr. 500 Ltr.	4 nos. 5 nos. 5 nos.	02 nos. C.C. tank having capacity approximate 4000.Ltr.
2.	BPS IHL (Institute of Higher Learning)	5060.00 Sqm.	2000 Ltr. 1000 Ltr.	2 nps. 8 nos.	01no. C.C. tank having capacity Approximate 7000 Ltr.
3.	BPS ITTR	2425.00 Sqm.	1000 Ltr.	8 nos.	
4.	LRC	818.00 Sqm.	1000 Ltr. 500 Ltr.	4 nos. 1 nos	
5.	Central Library	925.00Sqm.	1000 Ltr. 500 Ltr.	1 nos. 2 nos	
6.	Old Canteen	280.00 Sqm.			01 no. C.C. tank having capacity approximate 7000 Ltr.
7.	PNB Building	185 Sqm.	500 Ltr.	1 nos.	
8.	Post Office Building	110.00 Sqm.	500 Ltr.	1 nos.	
9.	MSM Institute of Ayurveda				
(i)	College Building	3790 Sqm.	1000 Ltr.	8 nos.	
(ii)	Pharmacy Building	570 Sqm.	1000 Ltr.	1 nos.	
(iii)	Panchkarma	335.00 Sqm.	1000 Ltr.	3 nos.	
(iv)	Conference Hall	376.0 Sqm.			
(v)	New Hospital Building	2600.00 Sqm.	1000 Ltr. 500 Ltr.	12 nos. 4 nos.	
10.	BPS Mahila Polytechnic				
(i)	Teaching Block	1365.00 Sqm.	1000 Ltr.	3 nos. 1 nos.	

Sr. No.	Name of building	Covered area	Water storage tank capacity	No. of water storage tank	Remarks
			500 Ltr.		
(ii)	Pharmacy Block	2100 Sqm.	1000 Ltr. 500 Ltr.	4 nos. 1 nos.	
11.	PSD Institute of Law	4532.00 Sqm.	1000 Ltr	11 nos.	
12.	Kiosk (Canteen)	175.00 Sqm.	1000 Ltr	3 nos.	
13.	Teaching Block –I	14399.50 Sqm.	1000 Ltr. 500 Ltr.	8 nos. 8 nos.	02 nos. PVC tank having capacity approximate 5000 Ltr.
14.	Teaching Block – II	14399.50 Sqm.	1000 Ltr. 1500 Ltr 500 Ltr. 5000 Ltr.	3 nos. 8 nos. 16 nos. 2 nos.	
15.	Campus School	3901.80 Sqm.	1000 Ltr. 2000 Ltr.	13 nos. 2 nos.	
16.	Administrative Block	4878.29 Sqm.	2000 Ltr.	6 nos.	
17.	B. Sc Hospitality Lab	666.65Sqm.	1500 Ltr. 1000 Ltr.	3 nos. 1 nos.	
18.	Shopping Centre	372.00 Sqm.	1000 Ltr.	3 nos.	
19.	Guest House	1690.78Sqm.	1000 Ltr.	14 nos.	
20.	South Campus Bhainswal Kalan – Teaching Block, Hostel & Laboratories etc	10699.53 Sqm	1000 Ltr. 500 Ltr.	4 nos. 1 nos.	
21	Vice-Chancellor Residence	257.79 Sqm	1000 Ltr. 500 Ltr.	2 nos. 3 nos.	
22	Prof. Quarter 1882 Sft. (15 Nos.)	2622.56 Sqm	1000 Ltr. 500 Ltr.	30 nos. 15 nos.	
23	Associates Prof. Quarter 1220 Sft. (32 Nos.)	3626.81 Sqm	1000 Ltr.	32 nos.	
24	Assistant Prof. Quarter 600 Sft. (48 Nos.)	2675.52 Sqm	500 Ltr.	48 nos.	

Sr. No.	Name of building	Covered area	Water storage tank capacity	No. of water storage tank	Remarks
25	Polytechnic Staff Quarter (12 Nos.)	2336.56 Sqm	1000 Ltr. 500 Ltr.	6 nos. 8 nos.	
26	Old Mahasabha Staff Quarter (26 Nos.)	2364.00 Sqm	1000 Ltr. 500 Ltr.	15 nos. 8 nos.	
27	BAMS Staff Quarter (14 Nos.)	1064.05 Sqm	500 Ltr.	14 nos.	
28	Degree college Staff Quarter (10 Nos.)	940.79 Sqm	500 Ltr.	9 nos.	
29	ITTR Staff Quarter (14 Nos.)	1246.00 Sqm	500 Ltr.	14 nos.	
30	4 th Class Staff Quarter (54 Nos.)	1697.736 Sqm	500 Ltr.	15 nos.	


7.3 Rainwater Harvesting

In the University there are totally five rainwater harvesting pits are available. The University recharge the ground water level saves a substantial amount of water through Rainwater Harvesting. The water which is collected is led to the ground water. (Usage: Ground water recharge).



7.4 Water Quality details

Water quality analysis for various parameters such as pH, Alkalinity, Hardness, Total Dissolved Solids (TDS), etc., is being carried out regularly by Public Health Engineering Department district water testing laboratory, Sonepet – Haryana

 PUBLIC HEALTH ENGINEERING DEPARTMENT DISTRICT WATER TESTING LABORATORY, SONIPAT Website :- https://phedharyana.gov.in/					
Memo No:- 1071		Date:- 19/07/2022			
Subject : Physical / Chemical Examination Report of Water Sample					
Sample ID/Classification : SNP/01444/7/2022 / Private			Sample Details		Date & Time
Sender : BPSMV tank-213798			Collected By		
Location : , BPSMV T-2, Khanpur Kalan			Collection Date		14/07/2022 at 15:27
Sample Description : Drinking Water			Received at lab		15/07/2022 at 15:36
Latitude / Longitude : 76.804465 / 29.149150			Analysis Start Date		15/07/2022
			Analysis End Date		18/07/2022
			Sample Quantity		1 Ltr
Test Result (As Per BIS 10500 :2012)					
S.No.	Tested Parameter	Result	Requirement (Acceptable Limit)	Permissible Limit (In the Absence of Alternate Source)	Protocol Used
1	Total Dissolved Solids @ 180°C ± 2°C	182	500 mg/l.	2000 mg/l.	APHA2540 C; 2017
2	Total Hardness as CaCo3	125.62	200 mg/l.	600 mg/l.	APHA2340 C; 2017
3	Calcium as Ca	22.38	75 mg/l.	200 mg/l.	APHA3500-Ca B; 2017
4	Magnesium as Mg	16.96	30 mg/l.	100 mg/l.	APHA3500 Mg B; 2017
5	Chloride as Cl	33.75	250 mg/l.	1000 mg/l.	APHA4500 Cl-B; 2017
6	pH @ 25°C	7.85	6.5 - 8.5	6.5 - 8.5	APHA4500-H+ B; 2017
7	Total Alkalinity	114	200 mg/l.	600 mg/l.	APHA 2320 B; 2017
8	Color	1.0	5 Hazen Units	15 Hazen Units	APHA 2120-B
9	Odour	Agreeable	Agreeable	Agreeable	IS 3025 (Part-5) : 1984 (RA 2018)
10	Taste	Agreeable	Agreeable	Agreeable	IS 3025 (Part-8) : 1984 (RA 2017)
11	Turbidity	0.55	1 NTU	5 NTU	APHA2130 B; 2017



PUBLIC HEALTH ENGINEERING DEPARTMENT
DISTRICT WATER TESTING LABORATORY, SONIPAT

Website :- <https://phedharyana.gov.in/>

Memo No:- 1070

Date:- 19/07/2022

Subject : **Physical / Chemical Examination Report of Water Sample**

Sample ID/Classification : SNP/01443/7/2022 / Private		Sample Details		Date & Time	
Sender : BPSMV13793		Collected By			
Location : , Khanpur Kalan		Collection Date		14/07/2022 at 14.49	
Sample Description : Drinking Water		Received at lab		15/07/2022 at 15.30	
Latitude / Longitude : 76.804200 / 29.149074		Analysis Start Date		15/07/2022	
		Analysis End Date		18/07/2022	
		Sample Quantity		1 Ltr	
Test Result (As Per BIS 10500 :2012)					
S.No.	Tested Parameter	Result	Requirement (Acceptable Limit)	Permissible Limit (In the Absence of Alternate Source)	Protocol Used
1	Total Dissolved Solids @ 180°C ± 2°C	193	500 mg/lit.	2000 mg/lit.	APHA2540 C; 2017
2	Total Hardness as CaCo3	129.61	200 mg/lit.	600 mg/lit.	APHA2340 C; 2017
3	Calcium as Ca	23.97	75 mg/lit.	200 mg/lit.	APHA3500-Ca B; 2017
4	Magnesium as Mg	16.96	30 mg/lit.	100 mg/lit.	APHA3500 Mg B; 2017
5	Chloride as Cl	34.74	250 mg/lit.	1000 mg/lit.	APHA4500 Cl-B; 2017
6	pH @ 25°C	7.94	6.5 - 8.5	6.5 - 8.5	APHA4500-H+ B; 2017
7	Total Alkalinity	116	200 mg/lit.	600 mg/lit.	APHA 2320 B; 2017
8	Color	1.0	5 Hazen Units	15 Hazen Units	APHA 2120-B
9	Odour	Agreeable	Agreeable	Agreeable	IS 3025 (Part-5) : 1984 (RA 2018)
10	Taste	Agreeable	Agreeable	Agreeable	IS 3025 (Part-8) : 1984 (RA 2017)
11	Turbidity	0.59	1 NTU	5 NTU	APHA2130 B; 2017

Remarks :-

- * The Results Given above are related to the sample as received and tested in PHED SONIPAT Lab.
- * The test report can't be regenerated in whole or part there of without written permission of Competent Authority.
- * The test report can't be used for any publicity or any legal purpose.
- * Reliability of water sample sample lies with sender/collector of water sample.
- * To check the sample report online Scan the QR Code below.
- * The test samples meant for chemical analysis will be disposed off after 15 days from the date of issue of test report unless until specifically requested by the customer for retaining over a longer period.

Water Sample has been found **"CONFORMING"** to Limits set in BIS10500:2012 for the tested parameters. Based on the tested parameters, the water sample is found **"POTABLE"**



Sample analyzed by :

SH. VIRENDER ,CHEMIST
 DISTRICT WATER TESTING LABORATORYSONIPAT
 email-chemist.sonepat@phedharyana.gov.in

8. WASTE MANAGEMENT

Waste management is important for an ecofriendly campus. The waste generated in the university is of three types namely solid, liquid and E-waste. These are collected and dumped at proper place provided by the University. The University has taken multiple initiatives in all the adopted villages by conducting door to door survey cum sensitization for reduced plastic burn and plastic free village to create awareness on issues related to Environment. The University also initiated to make village Gamri, a plastic free village. The University Environmental policy is the complete utilization of waste to make campus clean, hygiene and healthy.

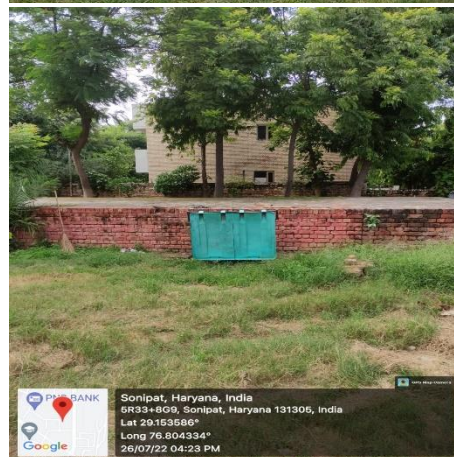
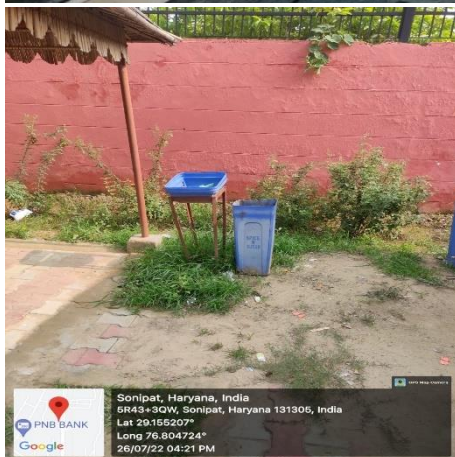
WASTE MANAGEMENT		
S. No	Description	Details
1	Waste disposal methods adopted and followed in the campus	The university has adequate manpower for cleanliness and collection of waste, and it is picked up by outsourced agency for disposal at designated dump site. The vegetable and fruit peels from hostels is collected along with horticultural waste is collected to make compost at the premises. The burning of combustible waste and dried leaves is strictly prohibited.
2	Way of disposing normal dry waste in the campus	Pick up by outsourced agency
3	Any steps taken by college for separation of waste	Pick up by outsourced agency and separated at dump site their own
4	No of dustbins available in the campus	25

The following data provide the details of the waste generated and the disposal method adopted by the University.

8.1 Status of Solid Waste Generation in the campus

As per National Green Tribunal direction waste is segregated at source. An office order has been circulated at university campus in which directions are given to segregate the different kind of waste. The vegetable and fruit peels from hostels is collected along with horticultural waste is collected to make compost at the premises. The burning of combustible waste and dried leaves is strictly prohibited. Moreover, university administration has also issued order regarding ban on polyethylene at the campus. The students and university residents are sensitized to avoid littering, dumping of waste at dust bins and to avoid burning of waste in the campus. There is minimal use of polythene at campus and university has hired a private agency for collection of solid waste daily to dispose the same at municipality approved dumping site.

- University lays emphasis on environment sustainability on its campus and takes multiple steps for proper waste management. Realizing the importance of sustainable and holistic waste management so as to provide healthy environment on campus.
- Department works for clean, green, environment-friendly campus with proper waste segregation and planned disposal of waste through authorized agencies.
- There is prohibition on use of plastic bottles, plastic glasses and cups, etc. on the campus.
- Every department, office, hostel, etc. have been provided with dust bins for disposal of waste material. Similarly, specially earmarked garbage disposal structures have been constructed on the campus for disposing off garbage/waste.
- The sweepers collect the waste/garbage from the respective depts./offices/hostels, etc., and place them in the earmarked garbage disposal space.
- Solid Wastes include college garbage, rubbish etc. e.g. paper in classrooms and offices, soiled tissue and disposable cups in the canteen, tin cans, and peelings in the kitchen of canteen. Dry waste and wet waste collected separately.





Per month data for waste disposal

S. No	Date	Slip no.	Gross weight (in kg)	Tare weight (in kg)	Garbage Received at dumping site
1	02-05-2022	9097	4810	2935	1875
2	04-05-2022	9168	4600	2935	1665
3	05-05-2022	9204	4565	2935	1630
4	07-05-2022	9282	4650	2935	1715
5	09-05-2022	9343	4625	2935	1690
6	10-05-2022	9402	4810	2935	1875
7	11-05-2022	9500	4580	2935	1645
8	13-05-2022	9557	4645	2930	1715
9	14-05-2022	9611	4465	2935	1530
10	16-05-2022	9647	4190	2930	1260
11	17-05-2022	9683	4365	2935	1430
12	19-05-2022	9752	4925	2930	1995
13	20-05-2022	9805	4785	2930	1855
14	21-05-2022	9827	4645	2930	1715
15	23-05-2022	9892	4330	2935	1395
16	25-05-2022	9939	4990	2930	2060
17	26-05-2022	9979	4845	2930	1915
18	27-05-2022	2	5015	2930	2085
19	28-05-2022	69	4915	2930	1985
20	30-05-2022	100	5140	2935	2205
21	31-05-2022	121	4940	2930	2010
Total MT			98835	61585	37250

S. No	Net Weight	Amount	Total Amount
1	37.25	637/-MT	23725/-Rs
Total			23728/-Rs

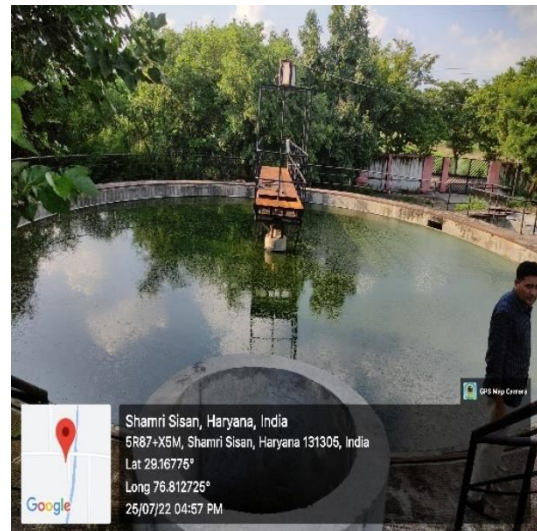
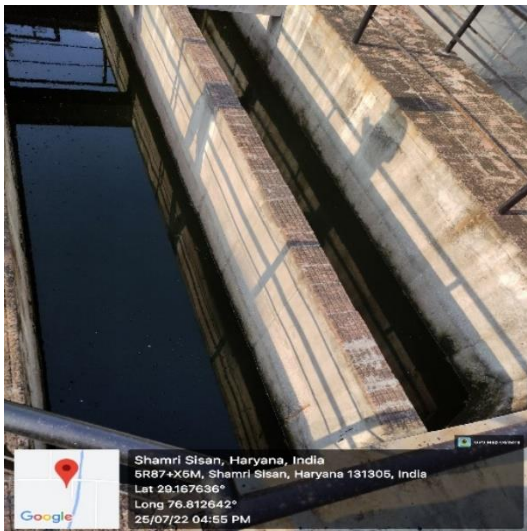
8.2 Liquid Waste Management:

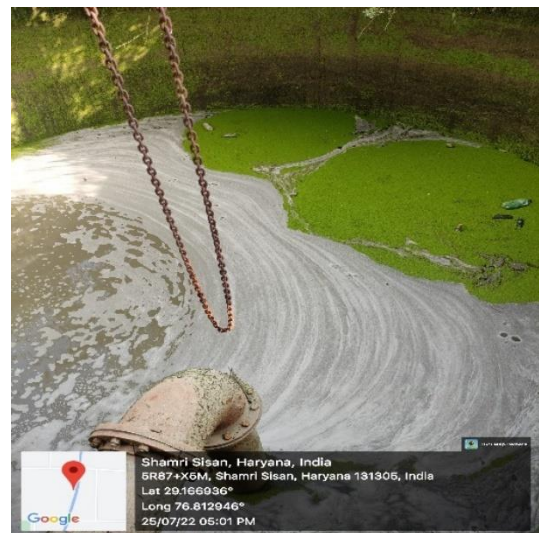
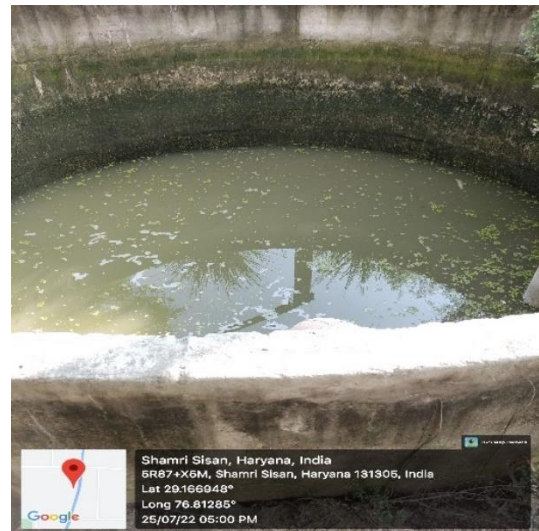
University has its own sewage treatment plant (STP) with a capacity of 3 million litre per day. Waste from various sewage of university is collected in the STP and after treatment the liquid is used in canals for irrigation purposes.

1. Bar screening – removal of large items
2. Screening – removal of grit
3. **Primary clarifier** – genital separation of solid organic matter from wastewater
4. Aeration – air is pumped into the aeration tank

Secondary clarifier

5. Chlorination (disinfection) -chlorine is added to kill any remaining bacteria in contact chamber
6. Water analysis & testing – testing for proper ph. level ammonia, nitrates, phosphates, dissolved oxygen, etc.
7. Efficient disposal – after meeting all permit specification clean water is reintroduced into the environment.



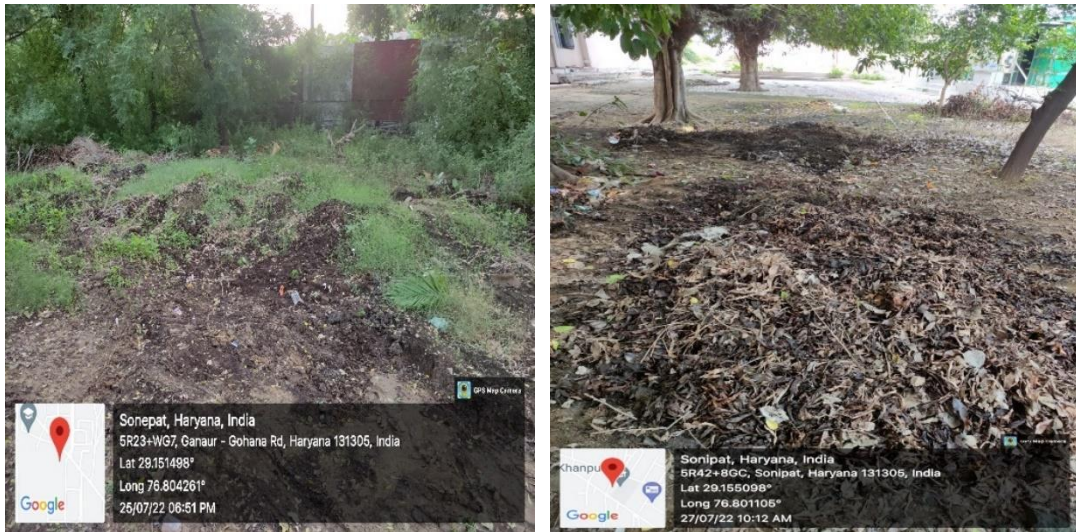


8.3 E-Waste Management

The management of e-waste at university campus has been given due attention and different types of electronic equipment/items are set to best use. The lab staff is trained to sort out minor repairs and for major repairs specialized technicians are hired. Moreover, annual maintenance contracts are also practiced maintaining computers, printer and other electronic items. The lab instructors are advised to use outdated computer systems for practical demonstration purposes. The obsoleted electronic equipment/items stored at storeroom and sale through auction to recycler. Moreover, organizing of 'Best out of Waste' events is practiced at different departments to motivate the students to put reuse of discarded CDs/DVDs and other e waste.

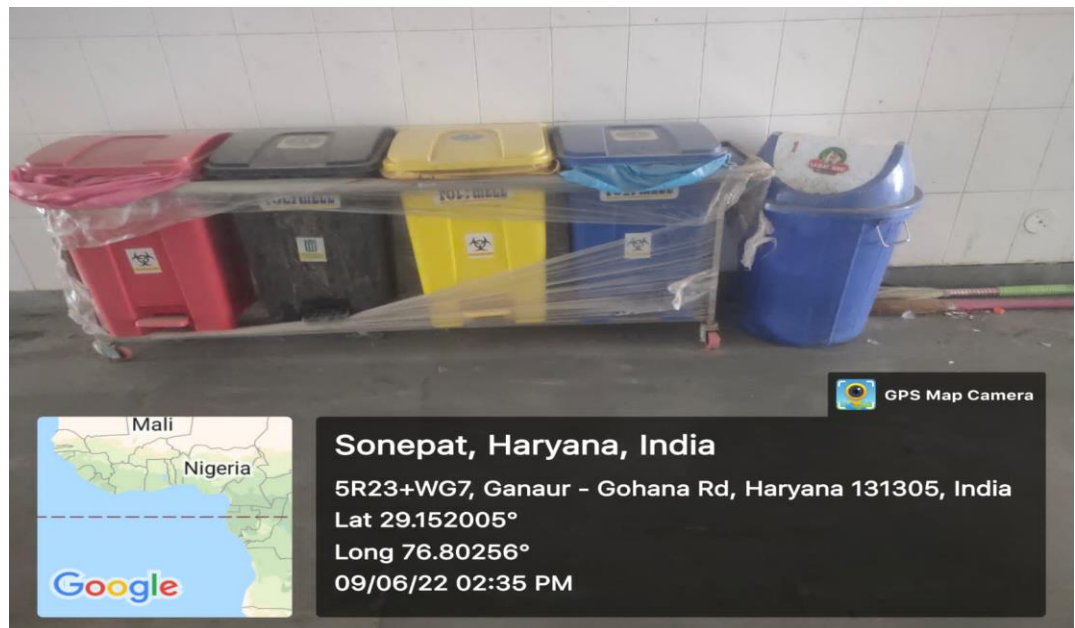
8.4 Waste recycling system:

BPSMV manages to recycle the solid waste by composting them. Waste collected on shed/solid waste/biodegradable waste is converted into compost by simple composting method so that minimum waste is delivered for management at the community level. There are totally five composting Pit in the Campus, that is used for gardening.



8.5 Biomedical waste management:

Biomedical Waste management is done as per Waste Management & Handling rules 2016. The work of biomedical waste management of MSM Institute of Ayurveda was assigned to Divya Waste Management Co., Kandela, Jind.



8.6 Hazardous Waste Management

Hazardous chemicals are kept separately in the laboratory away from the reach of students. Lab In-charge and Lab- technician’s takes care of the chemicals follow safety norms in the laboratory regarding handling of hazardous chemicals if any. Students are properly instructed before utilizing the chemicals.

8.7 Hygienic measure

Some Hygienic Measures that taken from the university side,

HYGIENIC MEASURES		
S. No	Description	Details
1	No of rest rooms available in the campus	25
2	Availability of lighting and ventilation facilities	Yes
3	Frequency of cleaning the rest rooms per day / week	Per Day
4	Way of disposing sanitary napkins in university and hostel	Pick up by outsourced agency and transported to municipal waste management site
5	Any steps taken by university in distributing sanitary napkins	No

9 LPG CONSERVATION MEASURES

9.1 LPG Consumption in Hostel details are as follows

LPG CYLINDER		
S. No	Description	Details
1	No of students in a hostel	2870
2	Average LPG cylinder usage per day	4
3	Average LPG cylinder usage per month	100
4	Average LPG cylinder usage per Year	1200
5	Cost of one LPG cylinder	Variable but at present it is Rs. 1060/cylinder
6	Food wasted by students/staff per day	No Food Waste is disposed. The left food is used for poultry and pigs by villagers.

Totally there are 9 Mess in the campus, in that total food waste was 75 to 80 kg Approximately. This waste food is used for poultry and pigs by villagers. Hostel and food waste details are as follows,

S. No	Location	Quantity, Kg
1	Hostel -1	10
2	Hostel -2 and 3	10
3	Hostel-5 and 6	10
4	Hostel 4,9 and 10	10
5	Hostel 12	12
6	Hostel 13	12
7	Hostel 14	12
	Total	76

9.2 Proposal of Biogas plant to reduce the LPG Consumption

In a day, nearly 75 to 80 kg of food is wasted (Hostel waste) inside the campus. It is recommended to install biogas plant in the campus which will save nearly 11 kg/day of LPG.

Proposal of Biogas plant to reduce consumption of LPG		
Description	Unit	Values
Quantity of food waste (Approximately)	kg/Day	80
Average LPG cylinder usage per Year	Nos/annum	1200
Quantity of LPG Cylinder	kg	14.2
LPG equivalent Biogas generation	kg/Day	11
LPG savings	kg/Day	11
LPG savings per annum	kg/annum	4115
LPG savings per annum	Nos/annum	290
Price of LPG cylinder	INR/Cylinder	1060
Annual savings	INR	307161
Investment	INR	800000
Payback	Months	31

10 CARBON FOOTPRINT ANALYSIS

Objective

To assess the amount of carbon dioxide produced in the campus by the human activities either direct or indirect contribution.

CARBON FOOT PRINT ANALYSIS		
S. No	Description	Details
1	No of Four wheelers used by students	Nil
2	No of Four wheelers used by staff	350
3	No of Two wheelers used by students	5
4	No of Two wheelers used by staff	350
5	No of people using public transport (Staff)	250
6	No of people using public transport (Students)	All day scholars use public transport
Fauna		
7	No of animals	Rabbit, different species of Snakes, Dogs, Cats, Monkey, Fox, Wild Rat, Porcupine
8	No of birds	Detail list is attached separately
9	No of insects	No census is carried out but there may be uncountable no of insect species
10	Any other details if any	Front Line Demonstration Centre
Flora		
11	No of matured trees (Age more than 10 years)	Approximately 5000
12	No of Semi matured trees (Age below 10 years)	Approximately 4500
13	No of plants/herbs/Shrubs	Approximately 3500
14	No of medicinal plants	215 plants in Ayurveda Department
15	Any other plants details if any	Herbal Garde spreading over more than 15 acres consist of no of medicinal plants

Matured trees (above 5 years), semi-grown trees (below 5 years), shrubs.

Floristic status of the institution:

The Current situation of planted trees are as follows

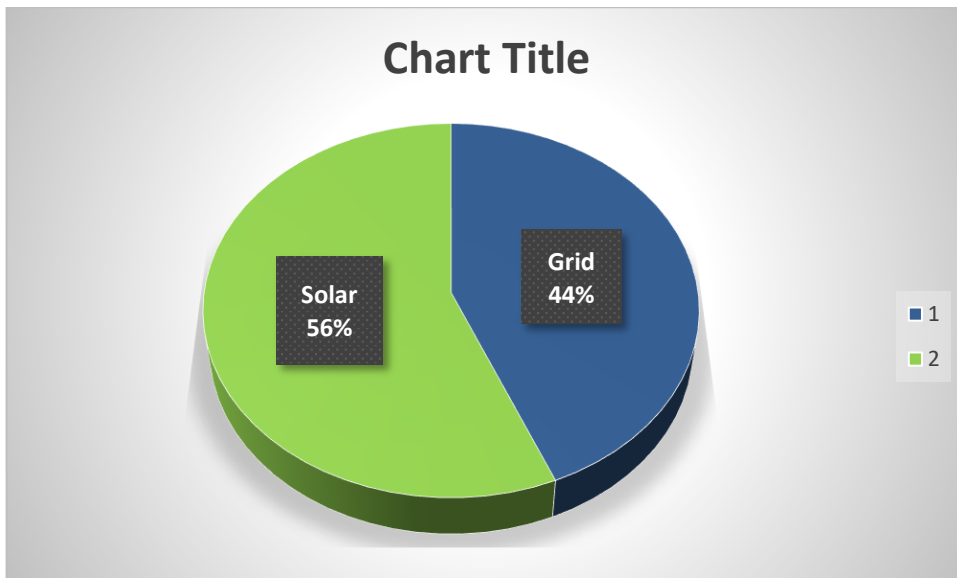
S. No.	Name	Number
1	Papady	495
2	Light	221
3	Jambu fruit and tree	493
4	Buckle	179
5	Mulberry tree and its fruit	37
6	Elstonia	86
7	The holy peepal tree	49
8	Bud	51

S. No.	Name	Number
9	Indian laburnum tree and its flowers	274
10	Mango tree as well as fruit	178
11	Ease	22
12	Moonlight	232
13	Ticoma	50
14	Lemon	24
15	Pomegranate	17
16	Schism	120
17	Budberry	14
18	Guava	169
19	Mossami	4
20	Awful	251
21	Goodhal	45
22	Chatarupa	50
23	Belfa	15
24	Champa	100
25	Arjun	347
26	Sorrowless	534
27	Casema	85
28	Canner	50
29	Molcerie	128
30	Pilkhan	37
31	Mahendi	3
32	Sitavar	1
33	Gulmore	63
34	Teak	86
35	Phix	98
36	Juicy	10
37	Net	1
38	A tree bearing edible flowers and beans	50
39	Caldra	82
40	Gazelia	117
41	Papaya	5
42	Poplar	20
43	Dijlt	11
44	Mahuva	29
45	Outlaw	1
46	Desi kiker	14
47	Kadamb	7
48	Silver	7
	Total	4962

Energy Consumption Scenario

The campus electricity consumption details by utility wise

1. The University total electricity consumption by utility grid and solar is 2478728 kWh during the period 2021 to 2022.
2. The University total electricity consumption by utility grid is 1083450 kWh during the period 2021 to 2022.
3. The University total electricity consumption by utility solar is 1395278 kWh during the period 2021 to 2022.



Carbon absorption by flora in the Institution

Carbon absorption capacity of one matured tree = 6.8 of CO₂. In bushes it absorbs an average of 200 g of CO₂. The carbon absorption capacity of a 10-sq.ft. area of lawn is 1 g CO₂.

1. Therefore, the carbon absorption capacity of 49500 matured trees in the campus of the Institution ($49500 \times 6.8 \text{ kg CO}_2/\text{Annum}$) = 336600 kg of CO₂/Annum.
2. The carbon absorption capacity of 4500 semi-grown trees is 50% of that of full-grown trees. Hence, the carbon absorption ($4500 \times 3.4 \text{ kg CO}_2/\text{Annum}$) = 15300 kg of CO₂/Annum.
3. There are more than 3500 bushes of various species being raised in the gardens of the Institution, total carbon absorption of 3500 bush was calculated to be $3715 \times 200 \text{ g CO}_2/\text{Annum}$) = 743 kg of CO₂/Annum

The grand total of carbon absorption by the flora in the campus is = 352643 kg per year.

Net Carbon emission of the campus

Description	Unit	Values
Carbon emitted due to the energy consumption in the campus	tCO ₂ /year	888.429
Carbon absorption by mature trees, semi mature trees, bushes and lawns	tCO ₂ /year	-352.643
Net carbon emission of the campus	tCO ₂ /year	535.786

Suggestion and Recommendations

There following terms can improve the green campus status of the University,

1. It is recommended to go for additional plantation of gardens, trees, and lawns in possible location to enhance oxygen emission.
2. Energy-efficient measures such as replacement of all old Non-LED with LED lamps, old electrical regulators of fans with energy-efficient gorilla fans, air-conditioning units with 5-star rated invertor systems need to be undertaken.
3. Biogas plants shall be installed in the campus using solid waste. The biogas shall be used by Hostel.
4. All the water taps shall be fitted with high-efficiency aerator taps to reduce wastage of water.
5. All toilets shall be fitted with dual- flush water closets, which will reduce water consumption by 40%.
6. Flow meter should be installed in both raw water procurement and Discharge of water (STP), which should measure the amount of water flowing through a pipe.