SGT UNIVERSITY
Shree Guru Gobind Singh Tricentenary University

NAAC A+

SDG 7

SUSTAINABLE DEVELOPMENT GOALS

SDG 7
Affordable & Clean Energy

REPORT
2023-24

SUSTAINABLE DEVELOPMENT GOALS

SGT University is committed to promoting clean energy on its campus by installing solar panels to harness renewable energy. This shift reduces reliance on non-renewable sources and minimizes the institution's carbon footprint. Research in sustainable energy technologies is actively encouraged, with projects focusing on solar energy efficiency and renewable energy integration. The university educates students on energy conservation and promotes sustainable practices within the community. Additionally, energy-efficient appliances and LED lighting are used throughout the campus, contributing to reduced energy consumption. These initiatives align with SDG 7, fostering a culture of sustainability and environmental responsibility.

17.3.7 – Progress against SDG7- Affordable and clean energy

1. Energy Audit Report
2. Green Audit Report
3. Environmental Audit Report

SGTU Publications on Various SDG's		
S NO	**Sustainable Development Goals**	**No of Publications**
1	Good health and well-being	734
2	Zero hunger	132
3	Affordable and clean energy	103
4	Quality education	92
5	Industry, innovation and infrastructure	69
6	Gender equality	62
7	Clean water and sanitation	58
8	No poverty	49
9	Reduced inequalities	42
10	Responsible consumption and production	42
11	Decent work and economic growth	40
12	Life on land	40
13	Sustainable cities and communities	39
14	Life below water	31
15	Peace, justice, and strong institutions	28
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Activities

SGT UNIVERSITY

ENERGY AUDIT REPORT

2023-2024

Prepared by

EHS ALLIANCE

Table Of Content

Certificate

EHS alliance

CERTIFICATE

PRESENTED TO

SGT UNIVERSITY

Budhera, Gurugram-Badli Road, Gurugram- 122505, Haryana, India.

That has been assessed by EHS Alliance Services for the comprehensive study of Energy Audit on institutional working framework to fulfill the requirement of

ENERGY AUDIT

ACADEMIC YEAR 2023-24

The energy-saving initiatives carried out by the institution have been verified in the report submitted and were found to be satisfactory.

The efforts taken by management and faculty towards all types of energy used in the institution and sustainability are highly appreciable and noteworthy.

EHS ALLIANCE SERVICES GURGAON

SIGNATURE

11.06.2024
DATE OF AUDIT

EHS ALLIANCE SERVICES, PLOT A-72, SURYA VIHAR, GURUGRAM, 122001
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Acknowledgement

EHS Alliance Services extends its heartfelt gratitude to the management of Shree Guru Gobind Singh Tricentenary University (SGT University) for entrusting us with the crucial task of conducting the Energy Audit. We deeply appreciate the cooperation provided by all teams involved, which facilitated the successful completion of the assessment.

Firstly, we would like to express our sincere thanks to ***Prof. S.P. Aggarwal, Pro-Vice Chancellor (SGT University)***, for giving us the opportunity to evaluate the environmental performance of the campus.

Our appreciation also goes to ***Prof. (Dr.) Joginder Yadav, Registrar, SGT University,*** for his unwavering support and guidance, without which the project could not have been completed.

Additionally, we are grateful to the other staff members who actively participated in data collection and field measurements. We also extend our thanks to

Dr. Archana Chaudhary	Chairperson, Environment Committee
Mr. Gaurav Chaudhary	Admin Officer
Dr. Shikha Sharma	Secretary, Environment Committee
Mr. Vijay Kumar Ghai	Assistant Manager Admin

for their valuable contributions and assistance throughout the process.

Disclaimer

The EHS Alliance Services Audit Team has prepared this report for SGT University based on the input data provided by the University's representatives, supplemented by the expert team's best judgment.

While reasonable care has been taken in preparing this report, the details contained herein have been compiled in good faith based on the information available. The conclusions are based on best estimates, and no representation, warranty, or undertaking, express or implied, is made. The Audit Team accepts no responsibility for any direct or consequential loss arising from the use of the information, statements, or forecasts in this report.

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Vijay Singh

Lead Auditor EMS & Energy

Dr. Uday Pratap

Co-Auditor EMS & Energy

Abbreviations

According to the ICC, Environmental Auditing is defined as:

A	**Amps**
AC	**Air Conditioner**
AC	**Alternating Current**
AMET	**Academy of Maritime Education and Training**
CFL	**Compact Fluorescent Lamp**
CIP	**Comprehensive Inspection Program**
DC	**Direct Current**
HSD	**High Speed Diesel**
Hz	**Hertz**
kg	**Kilogram**
kVA	**Kilo-Volt-Ampere**
kW	**kilo Watts**
kWh	**Kilowatt Hour**
kWp	**Kilowatt Peak**
LED	**Light Emitting Diode**
LPG	**Liquefied Petroleum Gas**
MMS	**Module Mounting Structure**
MPPT	**Maximum Power Point Tracker**
NAAC	**The National Assessment and Accreditation Council**
SEC	**Specific Energy Consumption**
SPV	**Solar Photovoltaic**
TV	**Television**
V	**Volts**
W	**Watts**
W/m2	**Watt Per Square Meter**

Overview Of University

SGT (Shree Guru Gobind Singh Tricentenary) University, Gurugram, spans over 70 acres of lush green campus, enveloped in serene beauty and a tranquil environment. Situated at Chandu-Bhudera on the outskirts of Gurgaon, it is less than five kilometers from the Delhi border at Daurala, offering convenient access from Indira Gandhi International Airport.

SGT University was established by the Haryana Private Universities (Amendment) Act No. 8 of 2013 to provide educational opportunities to all segments of society under the umbrella of Dashmesh Educational Charitable Trust. The Trust was founded in 1999 with the noble mission of spreading the teachings of Shree Guru Gobind Singh Ji, the great philosopher and social reformer who believed that "the spread of learning is the best service to mankind." The foundation for the university's growth was laid in 2002 with the establishment of the SGT Dental College.

In an ever-evolving work environment, SGT University fosters a culture of continuous learning to develop future innovative leaders of international repute. These leaders are quick to learn and implement new skills, understand changing customer needs, and can revamp operations effectively with a significant return on investment.

SGT University's modern infrastructure and learner-centric pedagogy fully support its students. The university is focused on investing in "Nurturing Future Leaders" to produce resourceful and productive employees at all levels, from "Green Graduates" to "Tenured Senior Managers." The university is determined to instill domain-specific skills and soft skills in its emerging innovative leaders, making them future-ready. At SGT University, the focus is on developing skills and behaviors that align with a good cultural fit and the right academic background.

Facilities in campus

Hostel:

SGT University provides separate hostels for girls and boys with round-the-clock security. Each hostel features separate dining rooms, recreation rooms, and study rooms.

Transport Services:

The university operates 60 buses across NCR and neighboring areas, serving both students and staff. Bus facilities are also available for hostellers for city visits, with charges based on actual usage.

Gym:

SGT University offers well-equipped gyms in both the girls' and boys' hostels.

Canteen:

The spacious cafeteria provides a wide variety of snacks to students and staff at reasonable rates.

Labs:

The Department of Anatomy at SGT Medical College, Hospital, and Research Institute features a well-equipped museum, dissection hall, and research lab, with facilities for tissue processing, special staining, and research in genetics and embryology.

Playgrounds:

SGT University offers a variety of sports facilities, including playgrounds for basketball, volleyball, football, table tennis, cricket, and badminton, promoting the all-round development of students

Seminar Hall:

The Seminar Hall is an ideal venue for seminars and lectures by medical professionals, offering students insights into various fields. These sessions provide first-hand info & opportunities for students to ask questions and clear their doubts.

Library:

The university's fully air-conditioned library, designed for comfort and natural lighting, can accommodate 450 users at a time. It offers modern facilities and resources, including CD-ROMs, online databases, books, journals, theses, WHO publications, and more.

Vision & Mission

Vision: To nurture individual excellence through value-based, cross-cultural, integrated, and holistic education, adopting contemporary and advanced methods blended with ethical values, contributing to building a peaceful and sustainable global civilization.

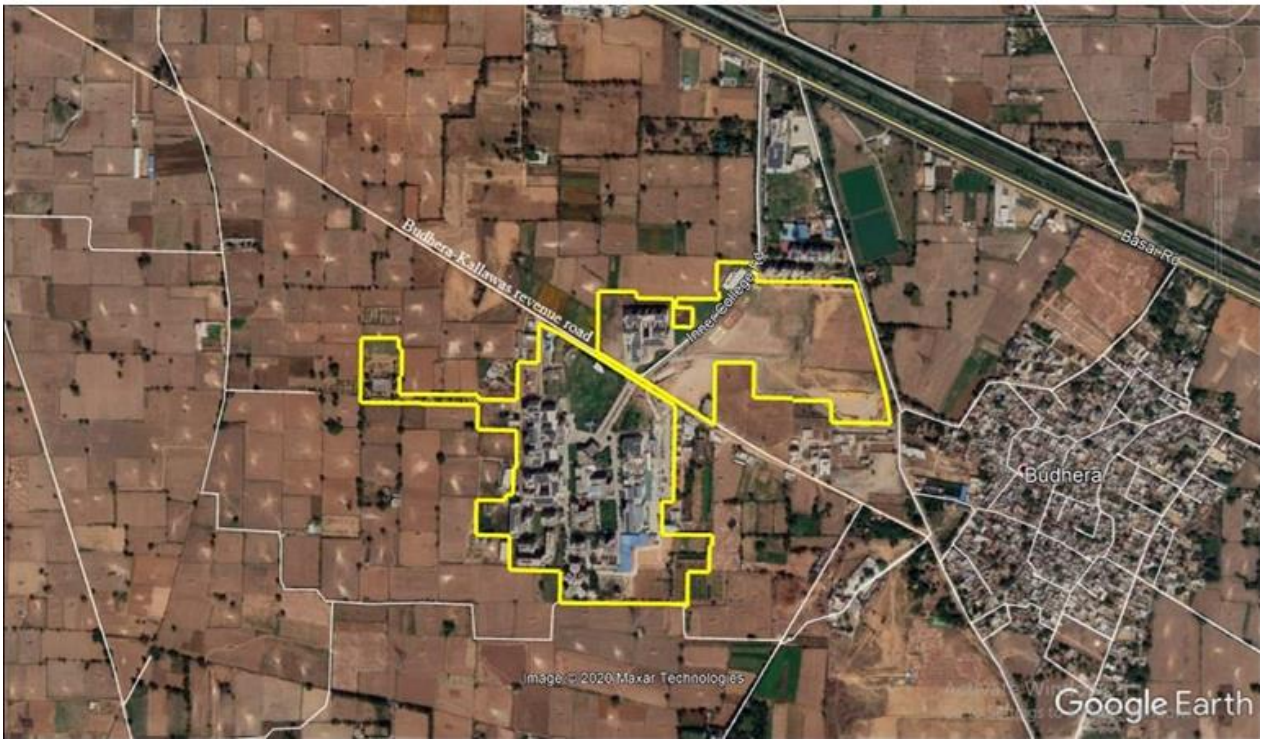
Mission:

- To impart higher education that meets global standards and the changing needs of society.
- To provide access to quality education and improve the quality of life at individual and community levels through innovations and ethical research.

- To engage with and promote the growth and welfare of the surrounding community through extension and outreach activities.
- To develop socially responsible citizens, fostering ethical values and compassion through community engagement and promotion activities.
- To create a competitive and coordinated environment where individuals develop skills and a lifelong learning attitude to excel in their endeavors.
- To develop Centers of Excellence to achieve cutting-edge technology in all fields.

Presently, SGT University offers over 160 courses, including undergraduate, postgraduate, and PhD programs, across 18 faculties:

Faculty of Mass Communication & Media Technology	Faculty of Indian Medical System
Faculty of Hotel & Tourism Management	Faculty of Naturopathy and Yogic Sciences
Faculty of Fashion & Design	Faculty of Allied Health Sciences
Faculty of Commerce & Management	Faculty of Behavioral Sciences
Faculty of Engineering & Technology	Faculty of Dental Sciences
Faculty of Agricultural Sciences	Faculty of Nursing
Faculty of Education	Faculty of Medicine & Health Sciences
Faculty of Law	Faculty of Physiotherapy
Faculty of Science	Faculty of Pharmacy



Geo Coordinates from Google map: 28.4823843,76.8985063

Audit Participants

On behalf of University

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On behalf of EHS Alliance Services

Name	Position	Qualifications
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Mr Arun Prabath	*Co-Auditor*	*Environment Expert*

Executive Summary

The purpose of this Energy Audit was to identify opportunities to improve the energy efficiency of SGT University. Our primary concern was to reduce energy consumption while enhancing human comfort, health, and safety.

Beyond merely identifying the energy consumption patterns, this audit aimed to detect and categorize the most energy-efficient appliances. Additionally, we have shared some daily practices related to common appliances that may help reduce energy consumption. Data collection for this audit was conducted by the EHS Alliance Team, and the Energy Audit Report reflects the energy consumption patterns of the University based on an actual survey and detailed analysis during the audit.

The work comprehended area-wise consumption traced using suitable equipment. The analysis was carried out by our team with support from the staff members of SGT University. The report provides a list of possible actions to preserve and efficiently access the available resources, identifying their saving potential as well. We look forward to optimization efforts by the authorities, students, and staff members, who we hope will follow the recommendations in the best possible way.

The report is based on certain generalizations and approximations where necessary. The views conveyed may not represent the general opinion but rather the opinion of the team guided by interviews with clients. We are pleased to submit this Energy Audit Report to SGT University.

Energy Audit Analysis

1. Energy Consumption

To understand the Energy Consumption trends and for analyzing the average monthly consumption we have collected electricity energy bills from April 2021 to March 2022

The details of “Meter Connection” at “SGT UNIVERSITY” are as follows-

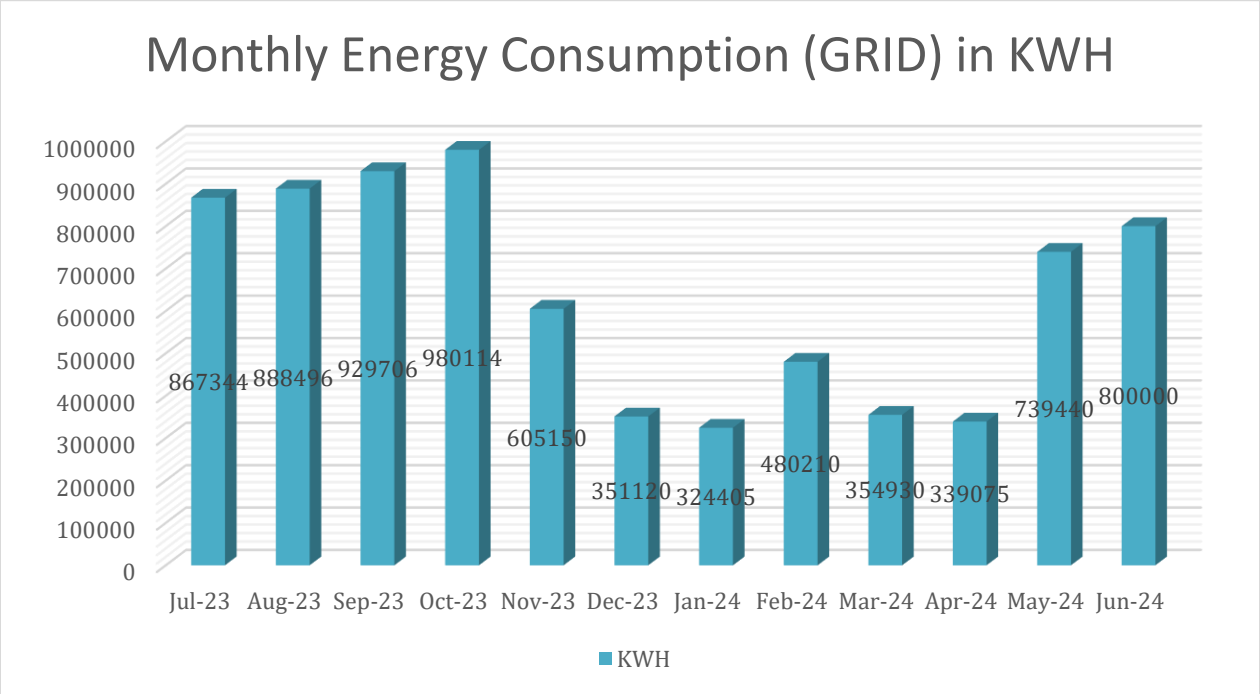
Name - Chairman Dasmesh

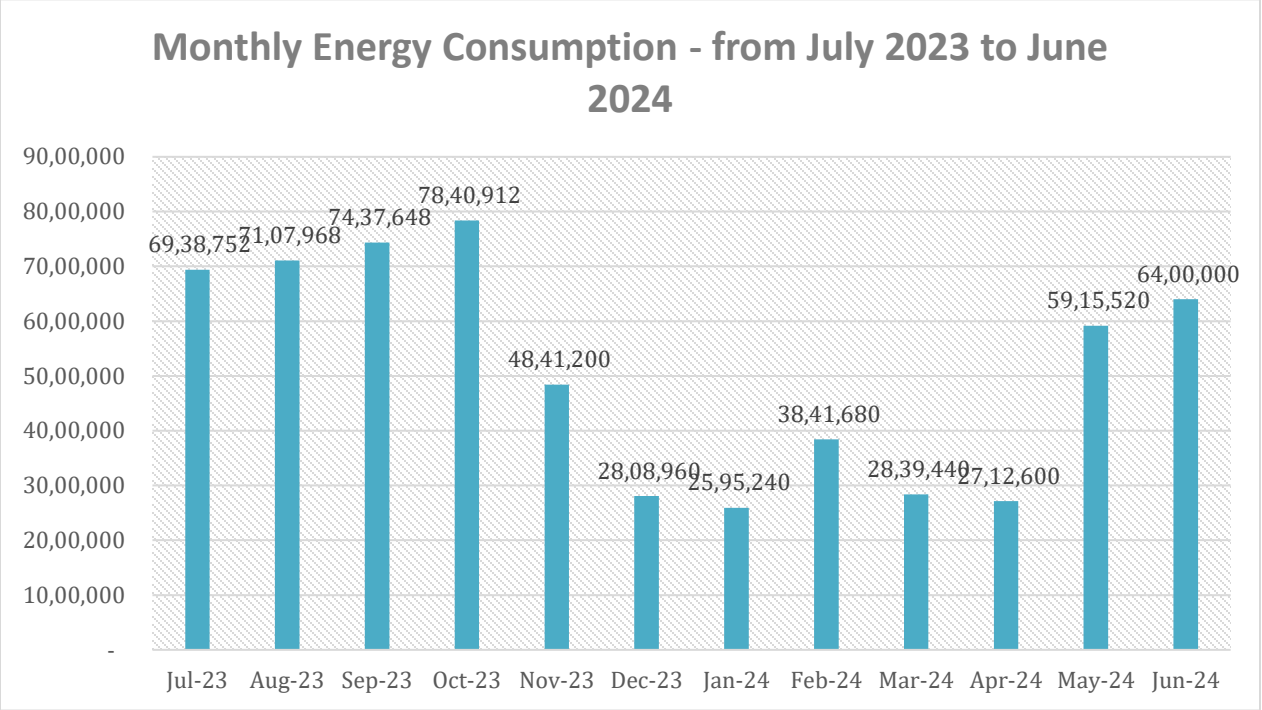
CA No. - 1578781000

1.1 Summary of Monthly Electricity Consumption and Total Bill Amount

To understand the Energy consumption trend and for developing the baseline parameter we have collected monthly energy bill for the 12 months i.e. from July 2023 to June 2024

Month	Grid kWh	Solar kWh	Total	Net Grid kWh	Amount in INR
Jul-23	867344	67446	934,790	867,344	6,938,752
Aug-23	888496	76973	965,469	888,496	7,107,968
Sep-23	929706	82450	1,012,156	929,706	7,437,648
Oct-23	980114	79725	1,059,839	980,114	7,840,912
Nov-23	605150	49660	654,810	605,150	4,841,200
Dec-23	351120	53849	404,969	351,120	2,808,960
Jan-24	324405	44329	368,734	324,405	2,595,240
Feb-24	480210	63699	543,909	480,210	3,841,680
Mar-24	354930	88959	443,889	354,930	2,839,440
Apr-24	339075	87486	426,561	339,075	2,712,600
May-24	739440	89833	829,273	739,440	5,915,520
Jun-24	800000	90000	890,000	800,000	6,400,000
SUM	**7659990**	**874,409**	**8,534,399**	**7,659,990**	**61,279,920**



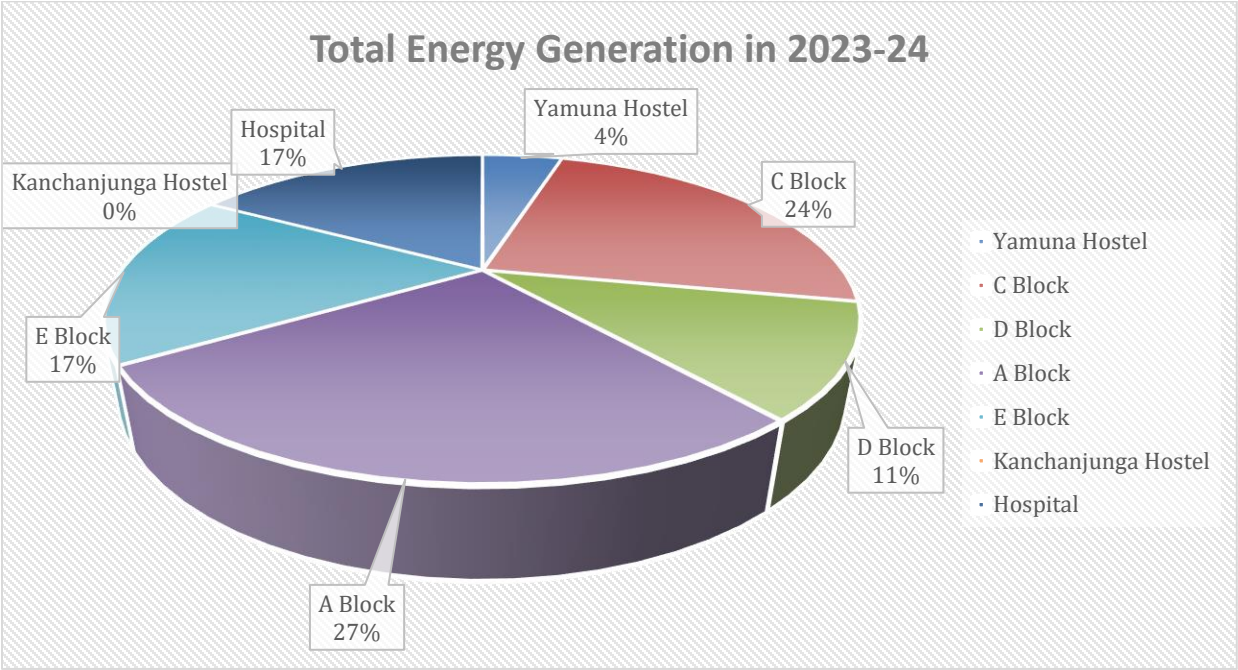


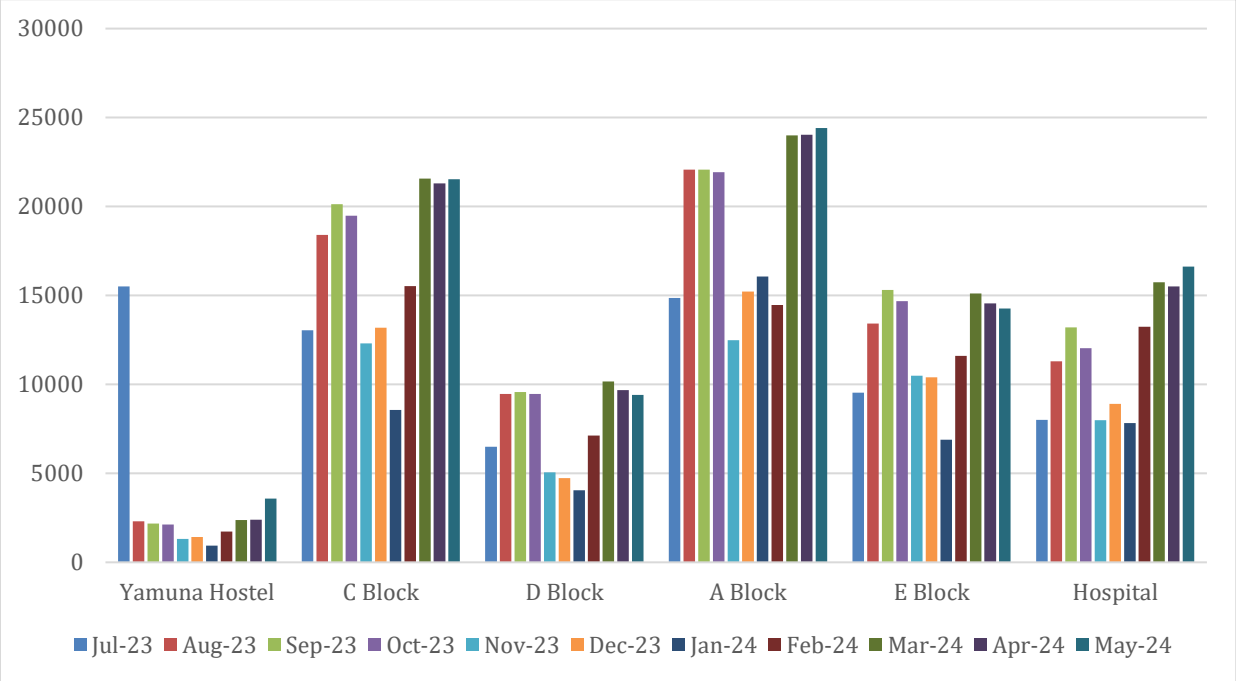
Electricity generation from Solar PV

Due to issue in digital solar inverter meter, we have taken average number of power generated, considering the 910 KW capacity in Gurgaon location.

Block	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Total
Yamuna Hostel	15500	2304	2177	2123	1320	1418	930	1727	2386	2402	3588		**35875**
C Block	13050	18410	20127	19482	12314	13183	8566	15523	21571	21307	21533		**185066**
D Block	6500	9461	9567	9466	5055	4742	4045	7125	10166	9681	9403		**85211**
A Block	14856	22071	22077	21924	12491	15212	16056	14465	23998	24033	24419		**211602**
E Block	9537	13427	15302	14685	10484	10393	6901	11613	15105	14547	14272		**136266**
Kanchanjunga Hostel *													**0**
Hospital	8003	11300	13200	12045	7996	8901	7831	13246	15733	15516	16618		**130389**
TOTAL	**67446**	**76973**	**82450**	**79725**	**49660**	**53849**	**44329**	**63699**	**88959**	**87486**	**89833**	**90000**	**874,409**

*Kanchanjunga Hostel Solav PV (50KW) was under breakdown for current period.

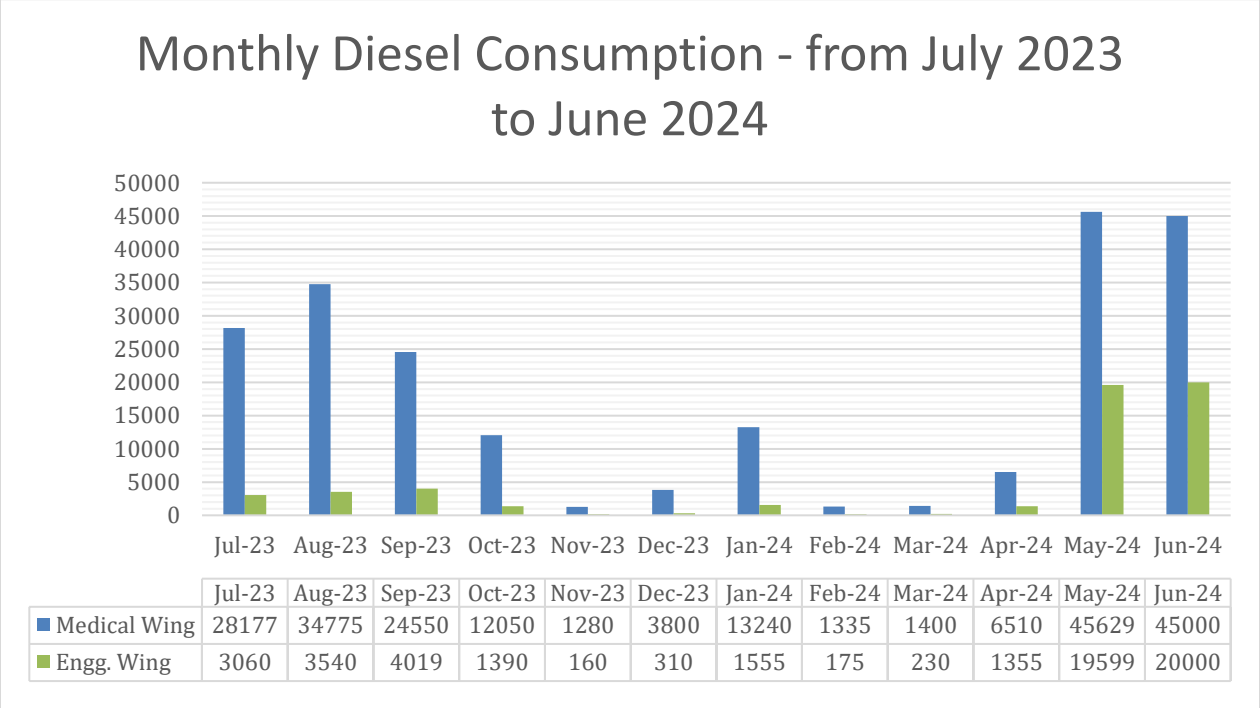

Total Energy Generation in 2023-24
Yamuna Hostel 4%
C Block 24%
D Block 11%
A Block 27%
E Block 17%
Kanchanjunga Hostel 0%
Hospital 17%
Yamuna Hostel
C Block
D Block
A Block
E Block
Kanchanjunga Hostel
Hospital


30000
25000
20000
15000
10000
5000
0
Yamuna Hostel
C Block
D Block
A Block
E Block
Hospital
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
Dec-23
Jan-24
Feb-24
Mar-24
Apr-24
May-24

2. Diesel Consumption

Below is the diesel consumption details in liters from July 2023 to June 2024.

Month	Medical Wing	Engg. Wing	Total Diesel (Liters)
Jul-22	28177	3060	31237
Aug-22	34775	3540	38315
Sep-22	24550	4019	28569
Oct-22	12050	1390	13440
Nov-22	1280	160	1440
Dec-22	3800	310	4110
Jan-23	13240	1555	14795
Feb-23	1335	175	1510
Mar-23	1400	230	1630
Apr-23	6510	1355	7865
May-23	45629	19599	65228
Jun-23	45000	20000	65000
Total	**217746**	**55393**	**273139**



3. Analysis of DG Sets

In the University, there are 9 Diesel Generator (DG) sets for its electrical power needs in case of Grid power failure. Total installed DG sets capacity is 6510 kVA.

DG station	Capacity	Hz	Sl No.	Make	Volts	PF	Phase	RPM	Amps	Mfg.
Station-1	1250	50 HZ	25467438	Cummins	415 Volts	0.94	3	1500	1739 Amps	2020
Station-2	1250	50 HZ	25474119	Cummins	415 Volts	0.94	3	1500	1739 Amps	2022
Station-3	1250	50 HZ	25470765	Cummins	415 Volts	0.94	3	1500	1739 Amps	2022
Station-4	750	50 HZ	25381383	Cummins	415 Volts	0.94	3	1500	1043 Amps	2012
Station-5	500	50 HZ	25349907	Cummins	415 Volts	0.94	3	1500	696 Amps	2010
Station-6	250	50 HZ	25764515	Cummins	415 Volts	0.94	3	1500	348 Amps	2010
Station-7	1010	50 HZ	25467438	Cummins	415 Volts	0.94	3	1500	1405 Amps	2021
Station-8	125	50 HZ	62687154	Cummins	415 Volts	0.94	3	1500	174 Amps	2008
Station-9	125	50 HZ	62687156	Cummins	415 Volts	0.94	3	1500	174 Amps	2008

DG Set Operation details		
Operating hours during testing	Hours	0.50
% Loading	%	72.76
Energy Generation	kWh	34.98
Load	kVA	87.74
Fuel consumption during testing	Litre	12
Specific energy generation	kWh/litre	3.22

Analysis:-

As per the trial taken during the energy audit the percentage loading of DG set is 72.76% which is ok and specific energy consumption of DG Sets 3.22 KWH/Litre which is satisfactory because as per manufacturer recommendation, best practices for SEC in DG sets range from 3.0 to 3.5 kWh/litre and above.

4. AC System

Energy Efficiency Ratio (EER): Performance of smaller chillers and rooftop units is frequently measured in EER rather than kW/ton. EER is calculated by dividing a chiller's cooling Capacity (in Btu/h) by its power input (in watts) at full-load conditions. The higher the EER, the More efficient the unit. The cooling effect produced is quantified as tons of refrigeration (TR). The above TR is also called as air-conditioning tonnage.

Sl. No.	Location Details	Count of Acs
1	SGT UNIVERSITY, GURUGRAM.	16
2	A - BLOCK	171
3	E - BLOCK	233
4	KANCHANJUNGA	50
5	NILGIRI HOSTEL	14
6	SPORT OFFICE	28
7	LAW COLLEGE GROUND FLOOR	2
8	AYURVEDA HOSPITAL	39
9	GODAWARY	38
10	NARMADA HOSTEL	323
11	HOMI J BHABHA BLOCK	294
12	HOSPITAL	127
13	DENTAL BLOCK	104
14	GANGA HOSTEL	84
15	HIMALAYA HOSTEL	103
16	YAMUNA HOSTEL	38
17	C.V. RAMAN	30
18	KRISHNA HOSTEL	24
19	KAVERI GIRL HOSTEL	8
20	SARASWATI GIRL HOSTEL	3
21	ANIMAL HOUSE	4
	TOTAL	**1733**

Remarks: - We have checked Energy Efficiency Ratio of AC's and EER of AC's is fairly OK. But in future you should purchase 5-Star rated invertor based split AC's because power consumption of Inverter based BEE 5-Star rated AC's is less than non-star rated AC's.

5. Fan Analysis

In the SGT University, 5596 Ceiling Fans and 28 wall fans are installed. The observation and suggestion are given below.

Sl No.	Location/Identification	Ceiling Fan-60W	WALL FAN/65 watt
1	A Block	544	5
2	B Block	711	8
3	C Block	1013	
4	D Block	588	8
5	E Block	703	
6	Aryabhatt	103	
7	Homi J Bhabha	78	
8	CV Raman	303	
9	Ganga	350	
10	Yamuna	148	
11	Krishana	96	
12	Narmada	80	
13	Godawari	80	
14	Saraswati	27	
15	Kaveri	30	
16	APJ Abdul Kalam	40	
17	Kanchanjanga	201	1
18	Nilgiri	135	4
19	Ayurveda	40	
20	Naturopathy	16	
21	Himalaya Hostel	230	
22	Common Area	80	2
	Total Qty	**5596**	**28**

Analysis

In the University, majority of ceiling fans are of 60 W but BEE 5 Star Rated of 30W Ceiling Fans are present in the market. Considering the buyback period of BEE 5 star fans, we don't recommend university to replace BEE 5 Star rated fans of 30W, however university should consider purchasing 5star BEE fans for all future purchases.

Note:- Energy saving will increase or decrease if operating hours of machine /equipment will be increase or decrease and payback period will also increase or decrease if cost of investment(Cost of machine/equipment/accessories of machine) will increase or decrease because cost of investment is taken on tentative basis.

6. Lightening System Analysis

6.1 Brief description of existing system

For assessing energy efficiency of lighting system, Inventory of the Lighting System has been noted / collected, with the aid of a lux meter, measurement and documentation of the lux levels at various locations at working level has been done.

6.2 Inventory of Lights

SL. NO.	LOCATION/ IDENTIFICATION	200W-LED HIGH	150 W-LED HIGH	120 W LED POLE	50 W-LED HIGH	400 WATT	6 WATT LED	7 WAT LED BLUB	12 WAT LED	15 WAT LED	18 WATT LED	20 WAT LED 4'	22 WAT LED	24 WATT LED	36 WATT LED	36 WATT TUBE
1	A Block								400	190	400	50			300	
2	B Block						86		108	109	579	579			278	216
3	C Block						10			407	43	62	353	52	654	
4	D Block								321			10	496	202	44	
5	E Block						19	10	96		76	179			389	
6	Aryabhatt							62	35			186				
7	Homi J Bhabha							89	10			87				0
8	CV Raman						85	300		10		310				
9	Ganga						4	278	25	16	35	290	22			
10	Yamuna							152	8	10		240				4
11	Krishana						130	10	60			80				
12	Narmada						90	28	90			60			25	
13	Godawari						90	25	40			70				
14	Saraswati						24	71				7				
15	Kaveri						12	60				38				
16	APJ Abdul Kalam							40				53				
17	Kanchanjanga						362		15			204				0
18	Nilgiri						181		35			125				8
19	Ayurveda									6					45	
20	Naturopathy						51					2			10	
21	Himalaya Hostel						54	113		64		260	17			
22	Common Area	105	20	26	41	2									120	
	Total Qty	**105**	**20**	**26**	**41**	**2**	**1198**	**1238**	**1243**	**812**	**1133**	**2892**	**888**	**254**	**1865**	**228**

6.3 Lux Measurement

Description	Lux	Remark
Class Rooms	120 to 235	Acceptable
Offices	130 to 240	Acceptable
Corridors	35 to 90	Acceptable
Washrooms	45 to 76	Acceptable
Outdoor	36 to 95	Acceptable
Computer Lab	150 to 289	Acceptable
Parking area	45 to 94	Acceptable
Canteen	69 to 185	Acceptable

Analysis

SGT University has implemented LED based lighting solution in the campus. LEDs save energy, the life span is much greater and emit virtually no heat. The University has installed solar lights for street lights in the campus. SGT University is doing their bit for the energy conservation.

We recommend replacing the tube lights with LEDs, additionally we recommend increasing motion sensor-based lights in common areas such as libraries, washrooms, corridors, etc.

Table below shows the performance characteristics comparison of all luminaries.

Table - Luminous Performance Characteristics of Commonly Used Luminaries					
Type of Lamp	Lumens/Watt		Colour Rendering Index	Typical Application	Typical Life
	Range	Avg.			
Incandescent	8-18	14	Excellent (100)	Homes, restaurants, general lighting emergency lighting	1000
Fluorescent lamps	46-60	50	Good w.r.t coating (67-77)	Offices, shops, hospitals, homes	5000
Compact fluorescent Lamps (CFL)	40-70	60	Very Good (85)	Hotels, shops, homes, offices	8000-10000

High-pressure mercury (HPMV)	44-57	50	Fair (45)	General lighting in factories, garages, and car parking. floodlighting	5000
Halogen lamps	18-24	22	Excellent (100)	Display, flood lightening, stadium exhibition grounds, construction areas	2000 - 4000
High-pressure sodium (HPSV) SON	67-121	90	Fair (22)	General lighting in warehouses, factories, street lighting	6000 - 12000
Low-pressure sodium (LPSV) SOX	101-175	150	Poor (10)	Roadways, tunnels, canals, street lighting	6000 - 12000
Metal halide lamps	75-125	100	Good (70)	Industrial bays, spotlighting, floodlighting, retail stores	8000
LED Lamps	30-50	40	Good (70)	Reading lights, desk lamps, night lights, spotlights, security lights, signage lights, etc.	40000 - 100000

7. Other Power Consumption

7.1 Water Pump Details

S.No.	Location	Quantity	H P
1	E-Block (STP Side)	1	7.5
2	Nilgiri Hostel	1	7.5
3	Farm House	1	7.5
4	Admin Block (Backside)	1	7.5
5	Medical College (Near Fire Pump Room)	1	10
6	Medical Back Side Boundary Wall (Near Animal House)	1	5
7	Nursery	1	7.5
8	Nursery (Borewell) Mono Block	1	10
9	Dental	1	7.5
10	Yamuna (Backside)	1	7.5
11	Aryabhatt Block & Homi J. Bhabha Block	1	7.5
12	Student Gym Side	1	10
13	Agriculture (Mess Back Side)	1	7.5
14	Hospital	1	7.5
15	Waquaf Board (Security Gate No.4 Side)	1	7.5
16	C.V Raman Block Backside (Agriculture)	1	7.5

7.2 Other Load Details

Sl No.	Location/ Identification	60W Exhaust Fan	160W Exhaust Fan	180W-Desert Cooler	400 W-desert coller	GEYESER 2 KW	400 watt exhaust fan
1	A Block	50	48				
2	B Block	58		34		25	
3	C Block	10	35	4			
4	D Block	134					
5	E Block	32					
6	Aryabhatt	63				54	
7	Homi J Bhabha	49				40	
8	CV Raman	52					
9	Ganga	7				130	
10	Yamuna	85				96	
11	Krishana	5					
12	Narmada						
13	Godawari	15					
14	Saraswati						
15	Kaveri						
16	APJ Abdul Kalam	40					
17	Kanchanjanga	10				8	
18	Nilgiri	7				2	
19	Ayurveda	20				2	
20	Naturopathy	5					
21	Himalaya Hostel	34				13	
22	Common Area		12	4	6	5	20
	Total	**676**	**95**	**42**	**6**	**375**	**20**

Analysis

There should be a regular maintenance schedule of equipment like pumps, exhaust fans, and IT equipment. Electronics such as computers, printers, scanners, etc. more than 3 years or 5 years old (as per their life) should be replaced with new computers/laptops. Ideal temperature should be maintained for all electronic appliances.

8. Capacitor Bank

Sl. No.	Location/ Identification	Capacity in KVAR
1	Medical Substation	350
2	Medical Substation	550
3	Medical Substation	650
4	Engineering Substation	200

Annexure I – Noteworthy Photographs

STP installed (250 KLD)

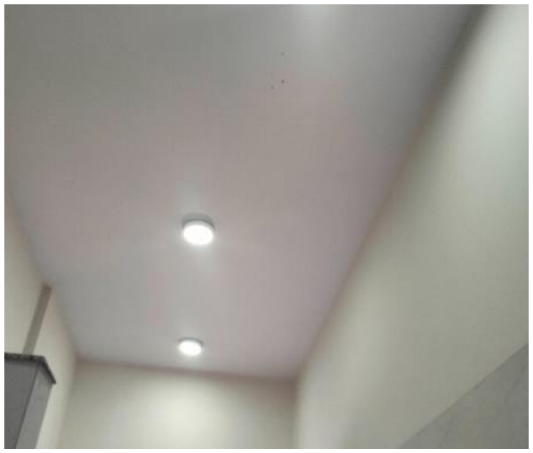
STP installed (250 KLD)

LPG cylinders placement

Washing machines usage in hostels to save water

Solar Panel Installed

Solar lights installed



LED lights installed

Split AC Installed

END OF THE REPORT

SGT UNIVERSITY

GREEN AUDIT REPORT

2023-2024

Prepared by

EHS ALLIANCE

Table Of Content

Certificate

EHS alliance

CERTIFICATE

PRESENTED TO

SGT UNIVERSITY

Budhera, Gurugram-Badli Road, Gurugram- 122505, Haryana, India.

Has been assessed by EHS Alliance Services for the comprehensive study of environmental impacts on institutional working framework to fulfill the requirement of

GREEN AUDIT

ACADEMIC YEAR 2023-24

The green initiatives carried out by the institution have been verified on the report submitted and was found to be satisfactory.

The efforts taken by the management and the faculty towards environment and sustainability are appreciated and noteworthy.

EHS ALLIANCE SERVICES GURGAON

SIGNATURE

11.06.2024
DATE OF AUDIT

EHS ALLIANCE SERVICES, PLOT A-72, SURYA VIHAR, GURUGRAM, 122001
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Acknowledgement

EHS Alliance Services extends its heartfelt gratitude to the management of SGT University for entrusting us with the crucial task of conducting the Green Audit. We deeply appreciate the cooperation provided by all teams involved, which facilitated the successful completion of the assessment.

Firstly, we would like to express our sincere thanks to ***Dr. Sumat Parkash Aggarwal, Pro-Vice Chancellor (SGT University),*** for giving us the opportunity to evaluate the environmental performance of the campus.

Our appreciation also goes to ***Prof. (Dr.) Joginder Yadav, Registrar, SGT University,*** for his unwavering support and guidance, without which the project could not have been completed.

Additionally, we are grateful to the other staff members who actively participated in data collection and field measurements. We also extend our thanks to

Dr. Archana Chaudhary	Chairperson, Environment Committee
Mr. Gaurav Chaudhary	Admin Officer
Dr. Shikha Sharma	Secretary, Environment Committee

Disclaimer

The EHS Alliance Services Audit Team has prepared this report for SGT University based on data provided by the university representatives and the expert judgment of our team. While every reasonable effort has been made in the preparation of this report, the details contained herein have been compiled in good faith based on the gathered information.

It is important to note that the conclusions have been drawn using the best available estimates. No representation, warranty, or undertaking, express or implied, is made, and the Audit Team accepts no responsibility for any direct or consequential loss arising from the use of the information, statements, or forecasts in this report.

If you wish to distribute copies of this report outside your organization, please ensure that all pages are included.

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Signature

LEAD AUDITOR

Concept & Context

The National Assessment and Accreditation Council (NAAC) in New Delhi has mandated that all Higher Educational Institutions (HEIs) must submit an annual Green, Environment, and Energy Audit Report starting from the academic year 2019-20. This requirement falls under Criteria 7 of the NAAC guidelines. NAAC, an autonomous organization in India, assigns grades (A, B, or C) to institutions based on their accreditation scores. Additionally, conducting a Green Audit aligns with the Corporate Social Responsibility (CSR) of HEIs, ensuring they contribute to reducing global warming through Carbon Footprint reduction measures.

In response to the NAAC directive on green auditing, the management decided to conduct an external environmental assessment by a qualified professional auditor. The green audit aims to examine the environmental practices within and around the campus that directly or indirectly impact the atmosphere. Green auditing involves the systematic identification, quantification, recording, reporting, and analysis of various environmental components within the campus.

The audit was initiated to review the institution's practices that may pose risks to the health of its inhabitants and the environment. Through the green audit, the university seeks guidance on improving its environmental structure and incorporating measures to protect the environment. This audit focuses on various aspects, including Green Campus, Waste Management, Water Management, Air Pollution, Energy Management, and Carbon Footprint reduction.

Outlined below are the concepts, structure, objectives, methodology, and tools of analysis used in the audit:

Introduction

Nowadays, educational institutions are increasingly mindful of environmental considerations, leading to the introduction of new and innovative concepts to make them sustainable and eco-friendly. To preserve the environment within their campuses, many educational institutes are adopting various approaches to address environmental challenges. These include promoting energy conservation, recycling waste, reducing water consumption, implementing water harvesting systems, and more.

However, the activities conducted by these institutions can also have adverse environmental impacts. A Green Audit is an official inspection that assesses the environmental effects of a college or university. It is conducted to evaluate the current environmental scenario on campus. Green audits are valuable tools for determining how and where an institution is using the most energy, water, or resources. This information helps the institution decide on changes to implement for savings. Additionally, it can identify the nature and volume of waste, which can be used to develop recycling projects or improve waste minimization plans.

Green auditing and implementing mitigation measures benefit the institution, the students, and the environment. It promotes health awareness, environmental awareness, values, and beliefs. It helps

staff and students understand the environmental impact of their institution better and supports financial savings through reduced resource usage. Furthermore, it fosters a sense of personal and social responsibility among students and teachers. The audit process involves primary data collection, site walkthroughs with university or college teams, and the assessment of policies, activities, documents, and records.

Overview Of University

SGT (Shree Guru Gobind Singh Tricentenary) University, Gurugram, spans over 70 acres of lush green campus, enveloped in serene beauty and a tranquil environment. Situated at Chandu-Bhudera on the outskirts of Gurgaon, it is less than five kilometers from the Delhi border at Daurala, offering convenient access from Indira Gandhi International Airport.

SGT University was established by the Haryana Private Universities (Amendment) Act No. 8 of 2013 to provide educational opportunities to all segments of society under the umbrella of Dashmesh Educational Charitable Trust. The Trust was founded in 1999 with the noble mission of spreading the teachings of Shree Guru Gobind Singh Ji, the great philosopher and social reformer who believed that "the spread of learning is the best service to mankind." The foundation for the university's growth was laid in 2002 with the establishment of the SGT Dental College.

In an ever-evolving work environment, SGT University fosters a culture of continuous learning to develop future innovative leaders of international repute. These leaders are quick to learn and

implement new skills, understand changing customer needs, and can revamp operations effectively with a significant return on investment.

SGT University's modern infrastructure and learner-centric pedagogy fully support its students. The university is focused on investing in "Nurturing Future Leaders" to produce resourceful and productive employees at all levels, from "Green Graduates" to "Tenured Senior Managers." The university is determined to instill domain-specific skills and soft skills in its emerging innovative leaders, making them future-ready. At SGT University, the focus is on developing skills and behaviors that align with a good cultural fit and the right academic background.

Facilities in campus

Hostel:
SGT University provides separate hostels for girls and boys with round-the-clock security. Each hostel features separate dining rooms, recreation rooms, and study rooms.

Transport Services:
The university operates 60 buses across NCR and neighboring areas, serving both students and staff. Bus facilities are also available for hostellers for city visits, with charges based on actual usage.

Playgrounds:
SGT University offers a variety of sports facilities, including playgrounds for basketball, volleyball, football, table tennis, cricket, and badminton, promoting the all-round development of students.

Canteen:
The spacious cafeteria provides a wide variety of snacks to students and staff at reasonable rates.

Labs:
The Department of Anatomy at SGT Medical College, Hospital, and Research Institute features a well-equipped museum, dissection hall, and research lab, with facilities for tissue processing, special staining, and research in genetics and embryology.

Gym:
SGT University offers well-equipped gyms in both the girls' and boys' hostels.

Seminar Hall:
The Seminar Hall is an ideal venue for seminars and lectures by medical professionals, offering students insights into various fields. These sessions provide first-hand info & opportunities for students to ask questions and clear their doubts.

Library:
The university's fully air-conditioned library, designed for comfort and natural lighting, can accommodate 450 users at a time. It offers modern facilities and resources, including CD-ROMs, online databases, books, journals, theses, WHO publications, and more.

Vision & Mission

Vision: To nurture individual excellence through value-based, cross-cultural, integrated, and holistic education, adopting contemporary and advanced methods blended with ethical values, contributing to building a peaceful and sustainable global civilization.

Mission:

- To impart higher education that meets global standards and the changing needs of society.
- To provide access to quality education and improve the quality of life at individual and community levels through innovations and ethical research.
- To engage with and promote the growth and welfare of the surrounding community through extension and outreach activities.
- To develop socially responsible citizens, fostering ethical values and compassion through community engagement and promotion activities.
- To create a competitive and coordinated environment where individuals develop skills and a lifelong learning attitude to excel in their endeavors.
- To develop Centers of Excellence to achieve cutting-edge technology in all fields.

Presently, SGT University offers over 160 courses, including undergraduate, postgraduate, and PhD programs, across 18 faculties:

- Faculty of Mass Communication & Media Technology
- Faculty of Hotel & Tourism Management
- Faculty of Fashion & Design
- Faculty of Commerce & Management
- Faculty of Engineering & Technology
- Faculty of Agricultural Sciences
- Faculty of Education
- Faculty of Law
- Faculty of Science
- Faculty of Indian Medical System
- Faculty of Naturopathy and Yogic Sciences
- Faculty of Allied Health Sciences
- Faculty of Behavioral Sciences
- Faculty of Dental Sciences
- Faculty of Nursing
- Faculty of Medicine & Health Sciences
- Faculty of Physiotherapy
- Faculty of Pharmacy

Audit Participants

On behalf of the university

Name	Designation
Prof. S.P. Aggarwal	Pro Vice-Chancellor (Admin)
Dr. Joginder Yadav	Registrar
Prof. Nishith Kumar Mishra	Director IQAC
Dr. Archana Chaudhary,	Associate Professor, FOSC
Mr. Gaurav Chaudhary,	Admin. Officer
Dr. Mohit Sharma,	Hospital Quality Assurance Cell (HQAC)
Dr. Bhoopesh Kumar Sharma	Associate Professor, FOSC
Ms. Rachna	Assistant Professor, FON
Mr. Mohit Deswal	Assistant Professor, FAHS
Mr. Sarvjit Singh Jaswal	GM Administration
Mr. Umesh Kothari	Administrator
Mr. Anurag Khajuria	Registrar Office
Dr. Shikha Sharma	Assistant Professor, FDSC
Mr. Sripal Singh	Member, Environment Committee
Mr. Vijay Ghai	Assistant Manager Admin

On behalf of EHS Alliance Services

Name	Position	Qualifications
Dr. Uday Pratap	*Co-Auditor*	*Ph.D., EMS: Lead Auditor ISO14001:2015, QCI–WASH*
Mr Puneet Kaushik	*Co-Auditor*	*M.Sc. M. Tech (Environment Science & Engineering), Energy Auditor, Post Diploma in Industrial Safety Management*
Mr Arun Prabath	*Co-Auditor*	*Environment Expert*

Executive Summary

Green auditing is a crucial step in identifying and assessing whether an institution's practices are sustainable and environmentally friendly. Traditionally, we have been responsible and efficient users of natural resources. However, over time, excessive use of resources such as water, electricity, and petrol has become a habit, especially in urban and semi-urban areas. Now is the right time to evaluate if our processes consume more resources than necessary and whether we are using these resources wisely.

A green audit helps standardize these practices and provides a more efficient way to use natural resources. In the era of climate change and resource depletion, it is essential to reassess and transform processes to make them green and sustainable. A green audit offers a method to achieve this and raises overall awareness among individuals within the institution about maintaining an eco-friendly environment.

This is the fourth green audit conducted at the SGT campus to meet NAAC criteria. This audit primarily focused on various greening indicators, including energy consumption in terms of electricity and fossil fuels, soil quality, water usage, vegetation, waste management practices, and the campus's carbon footprint. Initially, a questionnaire was distributed to gather information about the existing resources and consumption patterns of students and staff at SGT University.

Green Audit Analysis

1.1General Information

Does any Green Audit conducted earlier?	Yes, This is fourth time SGT University has gone for External Green Audit in a systematic way of monitoring their environmental eminence.
What is the total strength (people count) of the Institute?	**Students** Male: 4522 Female: 4233 Total: 8747 **Teachers** Male: 349 Female: 379 Total: 728 **Non-Teaching Staff** Male: 1199 Female: 347 Total: 1546 **Total Strength** Male: 6070 Female: 4959 Total: 11029

What is the total number of working days of your campus in a year?	There are one hundred eighty working days in a year.
Where is the campus located?	The campus is located at Budhera, Gurugram-Badli Road, Gurugram (Haryana)-122505
Which of the following are available in your institute?	Garden area — Available Playground — Available Kitchen — Available Toilets — Available Garbage Or Waste Store Yard — Available Laboratory — Available Canteen — Available Hostel Facility — Available Guest house facility — Available
Which of the following are found near your institute?	**Municipal Dump Yard**: Not in the vicinity of the institute **Garbage Heaps**: No garbage heap **Public Convenience**: Public convenience is available **Sewer Line**: Approximately 4 km of sewer line within the campus **Stagnant Water**: No stagnant water **Open Drainage**: None **Industry (Type)**: None **Bus/Railway Station**: Budhera Bus Stand, Garhi Hashru Railway Station **Market/Shopping Complex**: Available

1.2 Waste Minimization And Recycling

Does your institute generate any waste? If so, what are they?	Yes, the following types of waste are generated by the campus • Biodegradable waste – Horticulture waste and food waste • Non-biodegradable waste – Paper and plastic waste • Biomedical waste – sanitary disposal waste • E-waste The University takes measures to manage the solid waste on the campus by the method of segregation at the source, composting of biodegradable waste, recycling of electronic waste, and restricting the use of plastics. The campus has color coded waste bins for bio-degradable (green) and non-biodegradable (blue) wastes for segregation. The biodegradable waste is converted into compost using the composting facility in the university. The compost is used in the nursery and campus garden.

What is the approximate amount of waste generated per day? (in KG approx.)	Biodegradable waste - 50 Kg Non-biodegradable waste - 50 Kg Hazardous Waste - 10 Kg (BMW) E-waste - 2 Kg
How is the waste generated in the institute managed? By Composting, Recycling, Reusing, Others (specify)	• University avoids use of single use plastic on the campus • Composting is done for horticulture waste management. • BMW of SGT University is being managed by the Biotic Waste Limited. Solid waste (Both dry and wet) is managed by Gurugram Waste Management System Pvt Ltd • Oil and hazardous waste is managed by Shiv Shakti Oil and Lubricants and Gujarat Enviro Protection and Infrastructure (Haryana) Pvt. Ltd • Greenobin is managing paper waste by doing bulk recycling. • SGT University is in collaboration with Earth Zone Recycling. They collect e-waste (computers, mobile, printers, servers, printers) in the campus, and send for recycling. • Bi-annual one week collection drive is organized by campus.
Do you use recycled paper in institute?	Yes, SGT University collaborate with third party recycle vendor for management of the used paper
How would you spread the message of recycling to others in the community?	University conducts regular awareness campaigns, workshops, and seminars to educate students, faculty, and staff about the importance of recycling and its positive impact on the environment. These initiatives include • Seminars and add-on courses for students • MoUs with NGOs • Reuse waste paper for poster makings • Nukkar-Natak by Students to increasing awareness • Part of Environment education
Can you achieve zero garbage in your institute? If yes, how?	• The university does not encourage use of single use plastic. • University converts the biodegradable garden and kitchen waste into compost. • The dry waste is reduced by using digital medium to circulate messages rather than printed paper. • The University practices the RRR principle. • The University collaborates with paper recycling services to recycle its paper.

1.3 Greening the Campus

Is there a garden in your institute?	Yes, about 794534 sq ft areas are developed as Gardens.
Do students spend time in the garden?	Yes, students spend around 2-4 Hours during winters.
What are total number of Plants in Campus?	Plant type with approx. count Full grown Trees 1,573 Small Trees 6,66 Hedge Plants 2,47,586 Grass Cover 7,94,534 Sq ft
Is the SGT campus having any Horticulture Department? (If yes, give details)	Yes, Total 65 staff deployed in horticulture 1 - Head 4 – Supervisor 60 – gardeners
How many Plantation Drives organized by campus per annum?	Five Plantation Drives are organized by campus in last Financial Year 2022-2023. A total 113182 plants were planted
How many trees and plants were planted in last drive? And, what is the survival rate?	Number of trees planted in 2023-24 8840 Plants damaged 35 Plants survived 355 Survival rate 91%
Is there any Plant Distribution Program for Students and Community?	The SGT University has a practice where all guests are given a planter as a gift rather than a bouquet of flowers
Is there any Plant Ownership Program?	Yes

1.4 Miyawaki Urban Forest

Total area	**3046 sq.m.**
Block area plantation	**7704**
Plantation for pathway, Pond, Sitting and Parking area etc.	**746**
	8450 Plant

Miyawaki Urban Forest				
Block	**Plants**	**Scientific Name**	**Plant (Nos)**	**Block**
A	Jamun	Syzygium cumini	500	
	Amrud	Psidium guajava	500	
	Harshringar	Nyctanthes arbor-tristis	350	
	Chandni	Tabernaemontana coronaria	500	
	Nerium	Nerium oleander	150	
		Total	**2000**	**500**
B	Neem	Azadirachta indica	300	
	Moringa	Moringa oleifera	300	
	Pahari Papri	Holoptelea integrifolia	300	
		Total	**900**	**300**
C	Shisham	Dalbergia sissoo	300	
	Kanji	Millettia pinnata	300	
	Champa	Plumeria alba	300	
	Chir	Pinus roxburghii	300	
		Total	**1200**	**300**
D	Emli	Tamarindus indica	300	
	Senna	Cassia siamea	300	
	Shahtoot	Morus alba	300	
	Amaltash	Cassia fistula	300	
		Total	**1200**	**300**
E	Belpatra	Aegle marmelos	150	
	Bakayan	Melia azedarach	150	
	Gulmohar	Delonix regia	150	
	Custard apple	Annona squamosa	100	
	Mosambi	Citrus limetta	50	
		Total	**600**	**150**
F	Lasoda	Cordia dichotoma	300	
	Mosambi	Citrus limetta	300	
	Kanji	Millettia pinnata	300	
		Total	**900**	**300**
G	Neem	Azadirachta indica	150	

	Gulmohar	Delonix regia	150	
	Champa	Plumeria alba	150	
	Chandni	Tabernaemontana coronaria	150	
		Total	**600**	**150**
H	Emli	Tamarindus Indica	150	
	Aonla	Phyllanthus emblica	150	
	Moringa	Moringa oleifera	150	
		Total	**450**	**150**
I	Jamun	Syzgium cumini	150	
	Pilkhan	Ficus infectoria	150	
	Kanji	Millettia pinnata	150	
	Chandni	Tabernaemontana coronaria	150	
		Total	**600**	**150**
	Total block		**2300**	

1.5 Water and Wastewater Management

List uses of water in your institute	Basic use of water in campus: Drinking – 317.83 KL/month Gardening – 251.95 KL/month* Kitchen and Toilets – 1152.04 KL/month Hostel – 4320.00 KL/Month Others – 381.49 KL/month Total = 6423.30 KL/Month * SGT University uses fresh water apart from 4787 KL treated water
How does your institute store water? Are there any water saving techniques followed in your institute?	SGT University relies on tanker for water supply as a primary source and 3 bore wells as a secondary source. 4 Overhead Water Tanks and 03 Underground Water tanks installed for storage of water. SGT University ensures regular maintenance of water tanks and checking of water quality standards on the campus. The water tanks and water coolers are checked every 3 months, and RO systems are regularly changed. **Saving Techniques** • Avoid overflow of water-controlled valves are provided in water supply system. • Close supervision for water supply system. • Push taps are installed • Water Conservation awareness for new students • Sprinklers usage for gardening and grass cover
Locate the point of entry of water and point of exit of waste water in your institute.	**Entry** – SGT University uses tankers for water and have borewells as a secondary source **Exit** – From Canteen, Toilets, bathrooms and Hostels through covered drainage which is connected to sewage treatment plant
Write down ways that could reduce the amount of water used in your institute	**Basic ways:** • The university ensures that the faucets in the washrooms and water filtration units are checked regularly and do not have any leakages. • University has initiated the installation of auto push taps to reduce water wastage. • Periodic Water Conservation awareness for new students • University has initiated Use of sprinklers for gardening • University has adopted drip irrigation for small plants

1.6 Animal Welfare

List the animals (wild and domestic) found on the campus (dogs, cats, squirrels, birds, insects, etc.)	Approx. 5 Dogs, 3 cats, 100+ Squirrels, 20+ species of Birds including peacock, and Butterflies are found in campus. A variety of bird's species and other flora and fauna available, so institute is doing their bit for bio diversity conservation.
Does your institute have a Biodiversity Program or a KARUNA CLUB?	Yes, SGT environment committee actively participates in activities including feeding the birds, planting fruit-based plants for birds, organizes biodiversity awareness campaigns, etc.

1.7 Carbon Emission

Electricity used per year - CO2 emission from electricity	(electricity used per year in kWh/1000) x 0.84 = 7659990/1000x0.84 = 6434.39 tons
LPG/PNG used per year - CO2 emission from LPG/PNG	(LPG/PNG used per year in kg/1000) x 2.99 =73758/1000 x 2.68 =197.67 tons
Diesel used per year - CO2 emission from HSD (Diesel)	(diesel used per year in litre/1000) x 2.68 = 273139/1000 x 2.99 = 816.69 tons
Transportation per year (car) CO2 emission from transportation (Bus and Car)	SGT University has 66 buses and 26 cars out of which 6 bus and 16 cars run on petrol & diesel 6X1X2x180/100x0.01 +16x2x2x180/100x0.02 = 0.43 + 2.37 = 2.80 tons *Calculation have been done for only diesel / petrol vehicles.

Total CO2 emission / year cumulative by electricity usage + bus and car transportation = 7451.55 tons.

1.8 Carbon Absorption

There are 2569 full grown trees and 28172 semi grown trees of different species and approximately 235735 shrubs/hedge plants.

Carbon absorption capacity of one full grown tree 22 kg CO2 Therefore Carbon absorption capacity of 1987 full-grown trees 2569 x 22 kg CO2 = 56.52 tons of CO2.

The carbon absorption capacity of 28172 semi-grown trees is approx. 35% of that of full-grown trees. Hence the carbon absorption 28172 x 6.8 kg of Co2 = 191.57 tons of Co2

There are approximately Hedge Plants 235735 of various species being raised in the gardens and grown in the areas where no buildings are built Carbon absorption of bush plants varies widely with their species. Certain bushes absorb very high level of CO2 where as some others absorb very low level of CO2. In the absence of a detailed scientific study, 200g of CO2, absorption is taken per bush (in consultation with Environmental Science specialists). Based on this, total carbon absorption of bushes is 235735 x 200 g = 47.15 tons of CO2

The lawns on the campus have buffalo grass, Mexican grass and indigenous grass species and cover a total area of 794534sq. ft. Carbon absorption capacity of a 10 sq. ft. area of lawn is 1 g per day Therefore, carbon absorption by lawn area 794534x 365 x 0.1 g CO2 = 29 tons of CO2

Grand total of carbon absorption capacity of the campus is 324.24 tons.

Green Initiatives By campus

- **Solid Waste Management**
  - University does composting for horticulture waste
  - Reduce the use of paper by supporting the digitization of attendance and internal assessment records.
  - Reduce the requirement of printed books by updating the e-books and e-journals collection of the University library.
  - Take initiatives to spread awareness amongst students about food wastage and ways of minimizing it
  - The habit of reusing and recycling non-biodegradable products
  - Organizing workshops for students on solid waste management.
  - There is a ban on single-use plastic and plastic crockery in the campus.
  - Systematically engage with the 3Rs of environment friendliness (Reduce, Reuse & Recycle).

- **Liquid Waste Management**
  - Maintain leakproof water fixtures.
  - Minimize the use of water by constructing more Indian-style toilets instead of Western-style toilets.
  - Continued employment of a caretaker to take immediate steps to stop any water leakage through taps, pipes, tanks, toilet flush etc.
  - Reuse of wastewater generated by the Reverse Osmosis (RO) system in washrooms.

- **Waste Water Management**
  - The University has two Sewage Treatment Plants (STP) with a capacity of 275 KLD.
  - There are two Effluent Treatment Plant (ETP) units with capacities of 40 KLD and 10 KLD respectively.

- **E-waste Management**
  - The University has a separate storeroom for the safe storage of electronic waste. Periodically, the University disposes of e-waste through an auction process to concerned agencies.

- **Renewable Energy**
  - A solar power plant with a capacity of 910 KW is installed on the building roof, supplying approximately 20% of the campus's total power.

- **Solar water heaters are installed on campus.**

- **Tree Plantation Drives**
  - Five plantation drives were conducted, with a total of 113,182 trees, ornamental plants, and hedge plants planted this financial year, achieving a survival rate of more than 80%.

- **Air Pollution Reduction**
  - Personal vehicles belonging to students are not allowed on campus to reduce air pollution.

- **Rainwater Harvesting**
  - SGT University has 12 traditional rainwater harvesting units and an additional 12 units with modular filters.

- **Green Committee Initiatives**
  - Van Mahotsav day was celebrated on 1 July because Van Mahotsav is regarded as a festival of life. The motto behind kicking off Van Mahotsav was spreading awareness of saving mother earth.
  - National Tree Day was celebrated on 28 July to inspire students to learn about the local environment while playing an active role in their community. Activities range from planting bush-tucker gardens, through to building habitat for native wildlife, nature play, and school competitions were carried out.
  - A plantation drive was carried out on Earth Day, April 22 to demonstrate support for environmental protection.

Recommendations

- **Purchase Policy**: Environmental parameters should be included in the purchase policy to achieve a cradle-to-grave approach for sustainability.
- **Water Monitoring**: Water meters should be installed in every building to monitor per capita water consumption.
- **Bore Well Permission**: Obtain bore well permissions from the authorized government department.
- **Water Conservation**: Increase the use of drip irrigation and customized sprinklers to conserve water on campus.
- **Tap Flow Rate**: Regularly monitor the flow rate of taps, ensuring it does not exceed 2.5 liters per minute.
- **Awareness Campaigns**: Organize plantation awareness campaigns in nearby schools and local communities to balance carbon emissions and absorption.
- **Training Programs**: Arrange training programs on environmental management systems and nature conservation for schools and local residents.
- **Staff Involvement**: Engage lower hierarchy staff in environmental awareness programs and campaigns.
- **Awareness Messaging**: Increase the display of messages in various locations to raise awareness about water and energy savings.
- **Green Building Guidelines**: Follow green building guidelines for future expansion projects on campus, as per NBC 2016.

Conclusion

This audit involved extensive consultations with all teams and interactions with key personnel on a wide range of environmental issues. SGT University has an Environmental Committee dedicated to the sustainable use of resources.

Overall, 60% of the SGT campus is designated for landscaping. The University is mindful of the environmental impacts of its actions and makes significant efforts to act responsibly. Although the University performs well, the recommendations in this report suggest numerous ways to enhance its sustainability practices.

Key areas for improvement include the periodic monitoring of water usage. We highly recommend installing water meters in each building/block and preparing a water balancing report.

References

- The Environment [Protection] Act – 1986 (Amended 1991) & Rules-1986 (Amended 2010)
- The Petroleum Act: 1934 – The Petroleum Rules: 2002
- The Central Motor Vehicle Act: 1988 (Amended 2011) and The Central Motor Vehicle
- Rules:1989 (Amended in 2005)
- Energy Conservation Act 2010.
- The Water [Prevention & Control Of Pollution] Act – 1974 (Amended 1988) & the Water (Prevention & Control of Pollution) Rules – 1975
- The Air [Prevention & Control Of Pollution] Act – 1981 (Amended 1987) The Air (Prevention & Control of Pollution) Rules – 1982
- The Gas Cylinders Rules – 2016 (Replaces the Gas Cylinder Rules – 1981
- E-waste management rules 2016
- Electrical Act 2003 (Amended 2001) / Rules 1956 (Amended 2006)
- The Hazardous Waste (Management and Handling and Trans-boundary Movement) Rules, 2008 (Amended 2016)
- The Noise Pollution Regulation & Control rules, 2000 (Amended 2010)
- The Batteries (Management and Handling) rules, 2001 (Amended 2010)
- https://urban-forests.com/impacts-2/co2/
- https://www.ecomatcher.com/how-to-calculate-co2-sequestration/

Annexure - Photographs of Environment Consciousness

Well maintained campus

Well ventilated building

Lush green campus

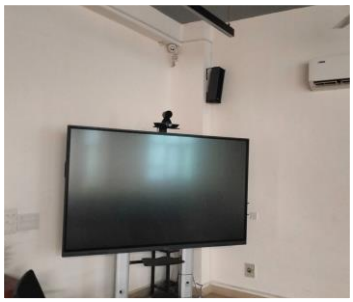
Sports Ground

Paving stone installed in campus

Color coded dustbins

Ornamental plants in campus

Indoor plants in campus



Smart Classrooms

Library

Cafeteria

Parking area

Sprinklers for gardening

Green campus

Washing machines in hostel for water conservation

Plantation drive

Environment Day Celebration

Earth Day Celebration

Solar PV installed

Solar lights installed

Rainwater harvesting

Push tap

Urinals to save water

Solar Lights

Drinking water treatment

Indoor plants

Save Trees - Awareness message display

END OF REPORT

SGT UNIVERSITY

ENVIRONMENT AUDIT REPORT

2023-2024

Prepared by

EHS ALLIANCE

Table Of Content

Certificate

EHS alliance

CERTIFICATE

PRESENTED TO

SGT UNIVERSITY

Budhera, Gurugram-Badli Road, Gurugram- 122505, Haryana, India.

Has been assessed by EHS Alliance Services for the comprehensive study of environmental impacts on institutional working framework to fulfill the requirement of

ENVIRONMENT AUDIT

ACADEMIC YEAR 2023-24

The environment legal compliances and initiatives carried out by the institution have been verified on the report submitted and were found to be satisfactory.

The efforts taken by management and faculty towards environment and sustainability are highly appreciated and noteworthy.

EHS ALLIANCE SERVICES GURGAON

SIGNATURE

11.06.2024
DATE OF AUDIT

EHS ALLIANCE SERVICES, PLOT A-72, SURYA VIHAR, GURUGRAM, 122001
WWW.EHSALL.IN | BUSINESS@EHSALL.IN | EHSALLIANCE@GMAIL.COM

Acknowledgement

EHS Alliance Services extends its heartfelt gratitude to the management of SGT University for entrusting us with the crucial task of conducting the Environment Audit. We deeply appreciate the cooperation provided by all teams involved, which facilitated the successful completion of the assessment.

Firstly, we would like to express our sincere thanks to ***Prof. S.P. Aggarwal, Pro-Vice Chancellor (SGT University)***, for giving us the opportunity to evaluate the environmental performance of the campus.

Our appreciation also goes to ***Prof. (Dr.) Joginder Yadav, Registrar, SGT University,*** for his unwavering support and guidance, without which the project could not have been completed.

Additionally, we are grateful to the other staff members who actively participated in data collection and field measurements. We also extend our thanks to

Dr. Archana Chaudhary	Chairperson, Environment Committee
Mr. Gaurav Chaudhary	Admin Officer
Dr. Shikha Sharma	Secretary, Environment Committee

for their valuable contributions and assistance throughout the process.

Disclaimer

The EHS Alliance Services Audit Team has prepared this report for SGT University based on the input data provided by the University's representatives, supplemented by the expert team's best judgment.

While reasonable care has been taken in preparing this report, the details contained herein have been compiled in good faith based on the information available. The conclusions are based on best estimates, and no representation, warranty, or undertaking, express or implied, is made. The Audit Team accepts no responsibility for any direct or consequential loss arising from the use of the information, statements, or forecasts in this report.

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EHS Alliance, its staff, and agents will maintain the confidentiality of all information relating to your organization and will not disclose such information to any third party, except as required by law or relevant accreditation bodies. EHS Alliance staff, agents, and accreditation bodies have signed individual confidentiality agreements and will only access confidential information on a 'need-to-know' basis.

Signature

LEAD AUDITOR

Concept & Context

In India, the concept of environmental auditing was first introduced under the Environment Protection Act, 1986, by the Ministry of Environment and Forests on March 13, 1992. This act mandates that anyone owning an industry or performing operations must obtain legal consent and submit an environmental report or statement.

The National Assessment and Accreditation Council (NAAC), New Delhi, has made it mandatory for all Higher Educational Institutions to submit an annual Green, Environment, and Energy Audit Report starting from the academic year 2019–20. This requirement forms part of the institutions' Corporate Social Responsibility to contribute to a sustainable environment.

In line with NAAC's guidelines, the University management decided to conduct an external environmental assessment by a qualified professional auditor.

The term "Environmental Audit" can vary in meaning; it may include assessments, surveys, and reviews related to environmental matters. Some organizations consider it to encompass health, safety, and environmental issues. While there is no universal definition, many leading organizations follow the basic philosophy outlined by the International Chamber of Commerce (ICC) in its 1989 publication on Environmental Auditing.

According to the ICC, Environmental Auditing is defined as:

“A management tool comprising a systematic, documented, periodic, and objective evaluation of how well environmental management and equipment are performing, with the intention of safeguarding the environment and natural resources in its operations/projects.”

This audit focuses on legal compliance with environmental regulations and the implementation of rules set by the Ministry of Environment, Forests and Climate Change (MoEFCC) or state pollution control boards. The audit's concepts, structure, objectives, methodology, tools of analysis, and goals are discussed in detail below.

Introduction

Nature is a precious gift essential for all life forms. Disturbances caused by urbanization and industrialization are increasing environmental problems, leading to rising temperatures and significant pressure on our planet. It is crucial to plan resource consumption sustainably to conserve natural resources for future generations.

Sustainable development is gaining global recognition as a means to save the earth. Judicious use of resources can preserve our planet's precious resources. Measuring environmental components is an effective step in conserving and protecting natural resources.

Environmental auditing began in the early 1970s, driven by civil lawsuits for non-compliance with environmental regulations. It involves on-site visits, sample collection, analyses, and reporting results to competent authorities.

Industries and the corporate world are increasingly adopting auditing to save natural resources. Academic institutions can also play a role in resource preservation and conservation within their premises.

This "Environmental Audit" report aims to encourage everyone to consider resource preservation, understand its importance, adopt measures to minimize resource use, and set an example for others by following eco-friendly practices. Effective environmental auditing can help minimize environmental risks at a low cost.

Overview Of University

SGT (Shree Guru Gobind Singh Tricentenary) University, Gurugram, spans over 70 acres of lush green campus, enveloped in serene beauty and a tranquil environment. Situated at Chandu-Bhudera on the outskirts of Gurgaon, it is less than five kilometers from the Delhi border at Daurala, offering convenient access from Indira Gandhi International Airport.

SGT University was established by the Haryana Private Universities (Amendment) Act No. 8 of 2013 to provide educational opportunities to all segments of society under the umbrella of Dashmesh Educational Charitable Trust. The Trust was founded in 1999 with the noble mission of spreading the teachings of Shree Guru Gobind Singh Ji, the great philosopher and social reformer who believed that "the spread of learning is the best service to mankind." The foundation for the university's growth was laid in 2002 with the establishment of the SGT Dental College.

In an ever-evolving work environment, SGT University fosters a culture of continuous learning to develop future innovative leaders of international repute. These leaders are quick to learn and implement new skills, understand changing customer needs, and can revamp operations effectively with a significant return on investment.

SGT University's modern infrastructure and learner-centric pedagogy fully support its students. The university is focused on investing in "Nurturing Future Leaders" to produce resourceful and productive employees at all levels, from "Green Graduates" to "Tenured Senior Managers." The university is determined to instill domain-specific skills and soft skills in its emerging innovative leaders, making them future-ready. At SGT University, the focus is on developing skills and behaviors that align with a good cultural fit and the right academic background.

Facilities in campus

Hostel:
SGT University provides separate hostels for girls and boys with round-the-clock security. Each hostel features separate dining rooms, recreation rooms, and study rooms.

Transport Services:
The university operates 60 buses across NCR and neighboring areas, serving both students and staff. Bus facilities are also available for hostellers for city visits, with charges based on actual usage.

Playgrounds:
SGT University offers a variety of sports facilities, including playgrounds for basketball, volleyball, football, table tennis, cricket, and badminton, promoting the all-round development of students.

Canteen:
The spacious cafeteria provides a wide variety of snacks to students and staff at reasonable rates.

Labs:
The Department of Anatomy at SGT Medical College, Hospital, and Research Institute features a well-equipped museum, dissection hall, and research lab, with facilities for tissue processing, special staining, and research in genetics and embryology.

Gym:
SGT University offers well-equipped gyms in both the girls' and boys' hostels.

Seminar Hall:
The Seminar Hall is an ideal venue for seminars and lectures by medical professionals, offering students insights into various fields. These sessions provide first-hand info & opportunities for students to ask questions and clear their doubts.

Library:
The university's fully air-conditioned library, designed for comfort and natural lighting, can accommodate 450 users at a time. It offers modern facilities and resources, including CD-ROMs, online databases, books, journals, theses, WHO publications, and more.

Vision & Mission

Vision: To nurture individual excellence through value-based, cross-cultural, integrated, and holistic education, adopting contemporary and advanced methods blended with ethical values, contributing to building a peaceful and sustainable global civilization.

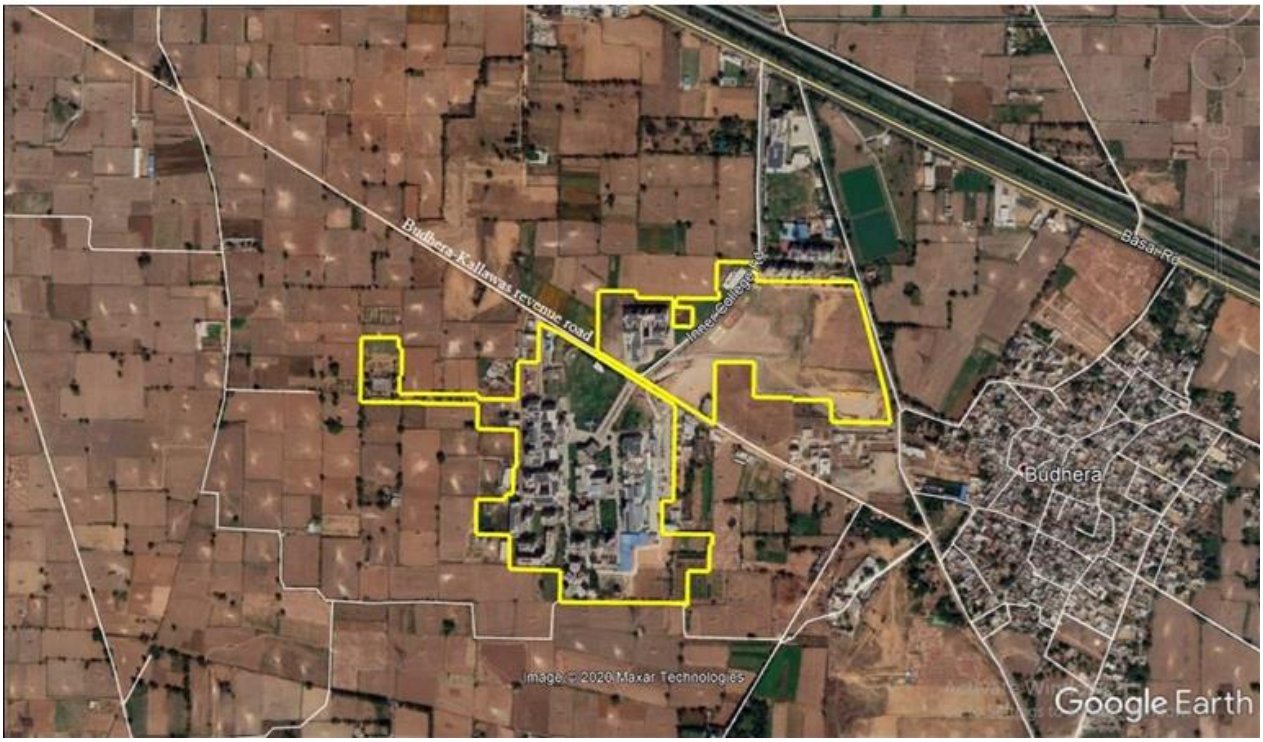
Mission:

- To impart higher education that meets global standards and the changing needs of society.
- To provide access to quality education and improve the quality of life at individual and community levels through innovations and ethical research.
- To engage with and promote the growth and welfare of the surrounding community through extension and outreach activities.
- To develop socially responsible citizens, fostering ethical values and compassion through community engagement and promotion activities.

- To create a competitive and coordinated environment where individuals develop skills and a lifelong learning attitude to excel in their endeavours.
- To develop Centers of Excellence to achieve cutting-edge technology in all fields.

Presently, SGT University offers over 160 courses, including undergraduate, postgraduate, and PhD programs, across 18 faculties:

Faculty of Mass Communication & Media Technology	Faculty of Indian Medical System
Faculty of Hotel & Tourism Management	Faculty of Naturopathy and Yogic Sciences
Faculty of Fashion & Design	Faculty of Allied Health Sciences
Faculty of Commerce & Management	Faculty of Behavioural Sciences
Faculty of Engineering & Technology	Faculty of Dental Sciences
Faculty of Agricultural Sciences	Faculty of Nursing
Faculty of Education	Faculty of Medicine & Health Sciences
Faculty of Law	Faculty of Physiotherapy
Faculty of Science	Faculty of Pharmacy



Geo Coordinates from Google map: 28.4823843,76.8985063

Audit Participants

On behalf of University

Name	Designation
Prof. S.P. Aggarwal	Pro Vice-Chancellor (Admin)
Dr. Joginder Yadav	Registrar
Prof. Nishith Kumar Mishra	Director IQAC
Dr. Archana Chaudhary,	Associate Professor, FOSC
Mr. Gaurav Chaudhary,	Admin. Officer
Dr. Mohit Sharma,	Hospital Quality Assurance Cell (HQAC)
Dr. Bhoopesh Kumar Sharma	Associate Professor, FOSC
Ms. Rachna	Assistant Professor, FON
Mr. Mohit Deswal	Assistant Professor, FAHS
Mr. Sarvjit Singh Jaswal	GM Administration
Mr. Umesh Kothari	Administrator
Mr. Anurag Khajuria	Registrar Office
Dr. Shikha Sharma	Assistant Professor, FDSC
Mr. Sripal Singh	Member, Environment Committee
Mr. Vijay Ghai	Assistant Manager Admin

On behalf of EHS Alliance Services

Name	Position	Qualifications
Dr. Uday Pratap	*Co-Auditor*	*Ph.D., EMS: Lead Auditor ISO14001:2015, QCI–WASH*
Mr. Puneet Kaushik	*Co-Auditor*	*M.Sc. M. Tech (Environment Science & Engineering), Energy Auditor, Post Diploma in Industrial Safety Management*
Mr. Arun Prabath	*Co-Auditor*	*Environment Expert*

Executive Summary

The environmental audit provides a snapshot of the campus's performance in adhering to environmental laws and regulations. Although valuable as a benchmark, the audit can quickly become outdated without ongoing monitoring mechanisms. Our goal is to promote a Green Campus that fosters sustainable values among students, ensuring they carry these principles into their future endeavors. This approach aims to integrate sustainability and environmental practices across institutions and organizations nationwide.

A Green Campus blends environmentally friendly practices with education to foster sustainability. It offers institutions the opportunity to redefine their environmental culture and develop innovative solutions to meet the environmental, social, and economic needs of humanity.

This is the sixth environmental audit for the University, focusing on its contributions to environmental protection and awareness at both local and global levels. The audit criteria include environmental awareness, waste minimization and management, biodiversity conservation, water and energy conservation, and compliance with environmental legislation. A questionnaire was used during the audit, and this report presents observations and recommendations for enhancing environmental consciousness.

Waste Management

Types of Waste on the University Campus

Effective waste management begins with understanding the types of waste produced. The following are common waste types generated on the institutional campus:

1. **Food Waste:** The campus generates food waste, with the average mess and canteen producing approximately 40 kg of food waste daily. Food waste often results from over-purchasing and excess food on trays. Immediate attention is needed to minimize food waste.

2. **Recyclable Materials:** The campus produces significant quantities of recyclable materials such as paper, cardboard, plastic, glass, and cans. Despite the digital age, many still use paper for notes, and recyclable containers are common for snacks and shipments. These recyclables are sold or auctioned to scrap vendors periodically.

3. **Student Clothes and Housewares:** Many students dispose of clothes and dorm furnishings at the end of the year rather than donating or recycling them. The University's environmental committee has organized donation drives, collecting over 10 cartons of clothes for those in need.

4. **E-Waste**: Electronic waste from outdated computers, printers, phones, and other devices is a major component of campus waste. The University partners with authorized external agencies for proper e-waste disposal.

5. **Chemical Waste:** Laboratories and cleaning services generate chemical waste, including hazardous substances that require specific disposal processes according to state regulations.

6. **Maintenance Waste**: The maintenance department deals with spent paints, solvents, adhesives, lubricants, and light bulbs. Many of these materials are difficult to recycle and may require special handling.

7. **Biological Waste**: Waste from laboratories and medical centers, including tissue samples and contaminated materials, must be handled and disposed of according to BMW Rules, 2016.

8. **Furniture**: Old or outdated furniture from classrooms, cafeterias, and labs is sold to junk dealers annually.

9. **Books/Magazines/Newspapers**: Obsolete textbooks and reading materials contribute to solid waste. The University either donates these items to junior students or auctions them to resellers.

10. **Construction and Demolition (C&D) Waste:** Building expansions and renovations generate C&D waste, which should be used for backfilling or disposed of at authorized sites by CPCB/SPCB.

11. **Solid Waste**: Solid waste is managed by providing it to the Municipal Corporation of Gurugram.

12. **Horticulture Waste:** The campus's extensive greenery results in significant horticultural waste, which is managed through an in-house composting system.

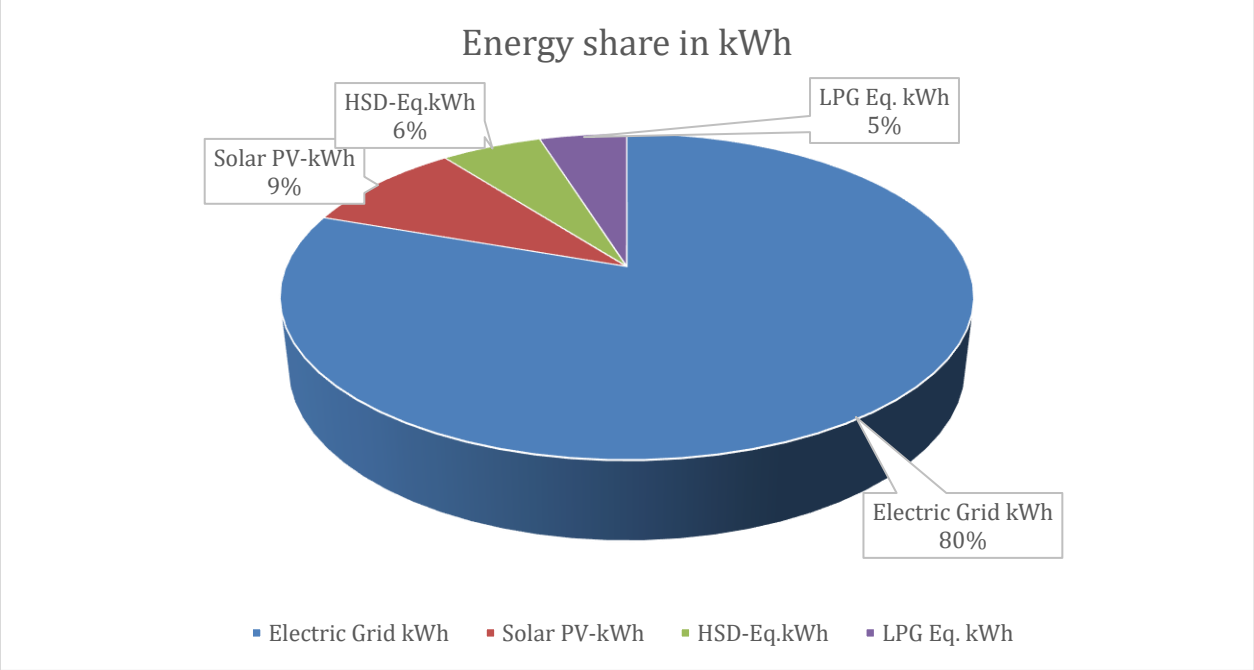
Environment Audit Analysis

1.1Energy Conservation

List ten ways that you use energy in your institute. (Electricity, LPG, firewood, others). Using this list, try to think of ways that you could use less energy every day.	The architectural design of our building allows for ample natural light and good ventilation, promoting energy efficiency. The University utilizes both electricity and LPG cylinders, and has implemented several measures to reduce energy consumption: **Electricity Savings:** • Use of LED and CFL lights for illumination. • Installation of a 910 KW solar power plant on campus. • Solar-powered street lights. • Solar water heaters in kitchens and hostels. • Use of pressure cookers in cooking to save energy. • Notices with messages like “Switch off lights” near switchboards. • Automatic on-off sensor-based solar lights. • Minimize the use of air conditioners in summers and room heaters in winters. • Encouragement to switch off laptops and computers when not in use. **Renewable Energy:** • A 910 KW solar panel system is operational. • Solar heaters installed for hostels and the mess.
Are there any energy-saving methods employed in your institute? If yes, please specify. If no, suggest some	**Energy Conservation Practices:** • Replacement of all conventional bulbs and tube lights with 20W LED lights. • Notices to switch off lights and fans when not in use. • Organizing various energy conservation awareness programs for students and staff. • Ensuring computers and ACs are set to power-saving mode. • Procurement of energy-saving equipment. • Encouragement to switch off bulbs/LEDs in well-lighted rooms during sunny afternoons.
How many CFL/LED bulbs have your institute installed?	SGT University has replaced all conventional bulbs and tube lights with 20W LED Lights.

Do you run “switch off” drills at the institute?	Yes
Are your computers and other equipment put in power-saving mode?	Yes, SGT University put the equipment on power-saving mode
Does your machinery (TV, AC, Computer, weighing balance, printers, etc.) run on standby modes most of the time? If yes, how many hours?	Yes, approx. 6 hours

Energy Share	kWh	Percentage
Electric Grid kWh	7659990.00	80.35%
Solar PV-kWh	874409.00	9.17%
HSD-Eq.kWh	535352.44	5.62%
LPG Eq. kWh	464009.46	4.87%
Total -kWh	**9533760.90**	**100%**



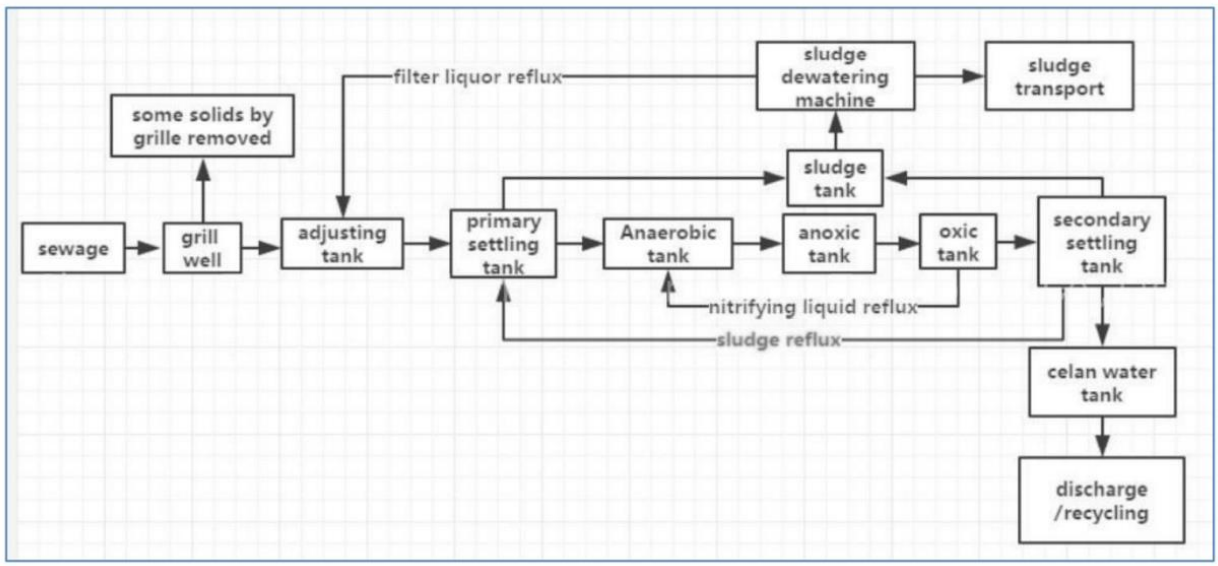
1.2 Water & Waste Water Management

List uses of water in your institute	Basic use of water in campus: Drinking – 317.83 KL/month Gardening – 251.95 Kl/month* Kitchen and Toilets – 1152.04 KL/month Hostel – 4320.00 KL/Month Others – 381.49 KL/month Total = 6423.30 KL/Month * SGT University uses fresh water apart from 4787 KL treated water
How does your institute store water? Are there any water saving techniques followed in your institute?	SGT University relies on tanker for water supply as a primary source and 3 bore wells as a secondary source. 4 Overhead Water Tanks and 03 Underground Water tanks installed for storage of water. SGT University ensures regular maintenance of water tanks and checking of water quality standards on the campus. The water tanks and water coolers are checked every 3 months, and RO systems are regularly changed. **Saving Techniques** • Avoid overflow of water-controlled valves are provided in water supply system. • Close supervision for water supply system. • Push taps are installed • Water Conservation awareness for new students • Sprinklers usage for gardening and grass cover
Locate the point of entry of water and point of exit of waste water in your institute.	**Entry** – SGT University uses tankers for water and have bore wells as a secondary source **Exit** – From Canteen, Toilets, bathrooms and Hostels through covered drainage which is connected to sewage treatment plant.
Write down ways that could reduce the amount of water used in your institute	**Basic ways:** • The University ensures that the faucets in the washrooms and water filtration units are checked regularly and do not have any leakages. • The University checks the water flow in the taps. • The University has initiated the installation of auto-push taps to reduce water wastage. • The campus has 60+ double-level flush systems in the academic blocks to further reduce water usage.

	• University has implemented several unique and unconventional approaches to sustainability that have yielded positive results. One example is implementing a campus-wide water conservation program with RO-reject water recycling and drought-resistant landscaping. • Habitat restoration projects like the biodiversity trail are undertaken to preserve and enhance local biodiversity, creating green spaces that support native wildlife. • The RO waste water is used in the toilets. • The University has initiated growing plants native to the semi-arid regions, requiring less water to survive.
Does your institute harvest rainwater?	Yes, SGT University has 12 traditional rainwater harvesting units and additional 14 units with modular filters
Is there any water recycling System?	Yes university has STP and ETP for waste water treatment. • University has 2 STP of capacity 275 KLD • 2 ETP units of capacity of 40 KLD and 10 KLD respectively

Zero Liquid Discharge (ZLD) and Rainwater Harvesting

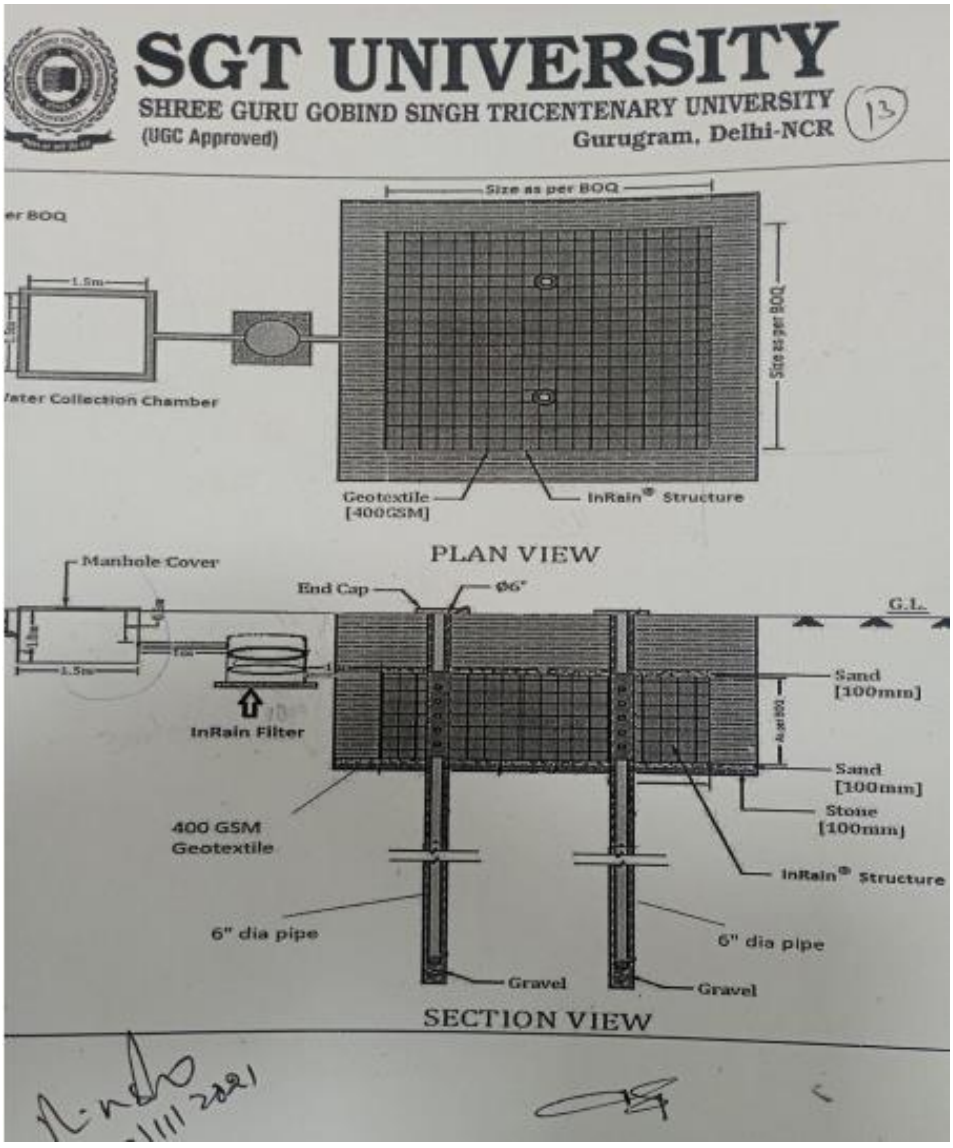
Zero Liquid Discharge (ZLD) is a strategic wastewater management system designed to ensure that no industrial wastewater is released into the environment. This is accomplished by treating wastewater, recycling it, and recovering and reusing it for various purposes such as flushing, gardening, DG cooling, and housekeeping.



SGT University has implemented a ZLD system with a 275 KLD Sewage Treatment Plant (STP) and Effluent Treatment Plants (ETP) of 10 KLD and 40 KLD capacity, in compliance with the Environment Clearance from the State Pollution Control Board dated 19.03.2021.

Rainwater Harvesting (RWH) involves collecting and storing rainwater rather than allowing it to run off. This water is collected from roof surfaces and redirected to a tank, cistern, deep pit (well, shaft, or borehole), aquifer, or reservoir with percolation to replenish the groundwater. SGT University has installed a total of 25 RWH units on the campus to support this initiative.

The flow diagram of the STP is provided below.



1.3 Bio Diversity

Does Institute promote biodiversity?	Promoting biodiversity at SGT University campus offers students valuable, hands-on educational opportunities to make positive environmental impacts. The following initiatives are undertaken to support biodiversity: **Hanging Birdhouses and Planting Wildflower Gardens**: SGT management and students actively hang birdhouses and plant wildflower gardens both on campus and in adopted local villages. These activities help attract and support local wildlife. **Recycling Programs**: Expanded recycling programs are run by the university's management and students to promote sustainable practices within the campus and surrounding communities. **Wildlife Presence**: The campus is home to various bird species and squirrels. These animals, along with other flora and fauna found on campus, are not harmful to humans. The university makes dedicated efforts towards their conservation. **Pet Policy and Stray Animals**: Only pets are allowed on the campus. Stray animals are not found inside the campus due to the secure fencing of the premises. **Environmental Awareness Campaigns:** The Environment Committee organizes various awareness activities. These include street plays (nukkad natak) and poster competitions in the locality of Sultanpur National Park, Gurugram. Faculty members also contribute by writing articles on Basai Wetland's biodiversity conservation to raise awareness among the local community.

1.4 Air Quality Management

Are the Rooms in Campus Well Ventilated?	Yes, rooms are designed with good ventilation in mind. The doors and windows, in most of the rooms, are positioned opposite each other to promote cross-ventilation.
Window Floor ratio of the Rooms?	Very Good, ample daylight utilization because of big windows.
What is the ownership of the vehicles used by your campus?	SGT University has 66 buses and 13 cars, 8 vans, and 5 other vehicles

<table>
<tr><td>Provide details of Institute-owned vehicles?</td><td>
<table>
<tr><th>Details of University owned vehicles</th><th>Buses</th><th>Cars</th><th>Vans</th><th>Other</th><th>Total</th></tr>
<tr><td>CNG</td><td>60</td><td>4</td><td>0</td><td>0</td><td>64</td></tr>
<tr><td>Petrol</td><td>0</td><td>0</td><td>5</td><td>3</td><td>8</td></tr>
<tr><td>Diesel</td><td>6</td><td>9</td><td>3</td><td>2</td><td>20</td></tr>
<tr><td>Total</td><td>66</td><td>13</td><td>8</td><td>5</td><td>92</td></tr>
</table>
*Campus has 3 e-rikshaws, but the same is not mentioned in the above table because e Rikshaw doesn’t require any fuel and are pollution free
</td></tr>
<tr><td>Is the PUC of the campus vehicles done?</td><td>Yes</td></tr>
<tr><td>Specify the type of fuel used by your campus’s vehicles</td><td>Diesel – 19
Petrol/CNG – 69
Electric – 4</td></tr>
<tr><td>Air Quality Monitoring Program (If, Any)</td><td>Yes, half-yearly monitoring is done by the NABL-approved Laboratory</td></tr>
<tr><td>Tell Air pollution mitigation initiatives, if any?</td><td>SGT University implements several measures to mitigate air pollution on campus:

Promotion of Public Transport: Students are encouraged to use public transportation, reducing the number of private vehicles on campus.

Restricted Vehicle Movement: No vehicle movement is allowed within the campus, except for periodic goods and service vehicles. This minimizes air pollution from vehicular emissions.

Designated Parking: Staff vehicles are parked in a designated space within the campus, further limiting vehicular movement and associated pollution.

Dust Pollution Control: Paved roads and extensive vegetation on campus significantly reduce dust pollution.

Waste Management: Burning of waste within the campus is strictly banned, preventing the release of harmful pollutants into the air.</td></tr>
</table>

1.5 Environment Legislative Compliance

Are you aware of any environmental Laws About different aspects of environmental management?	Yes, To promote environment management on the campus, SGT University follows these: • Protection of trees on campus (National Green Tribunal Act, 2010) • De-concretization of trees (National Green Tribunal Act, 2010) • Segregation and recycling of Waste (Solid Waste Management Rules 2016) • Reduce Noise on campus (Noise pollution (regulation and control) rule, 2000) • Reduce single use of plastic, and recycling of plastic (Plastic Waste Management Rules, 2016) • • Recycling of electronic waste (e-waste Management and Handling Rules 2011)
Does your institute have any rules to protect the environment? List possible Rules you could include.	Yes, the environment committee is conscious of environment protection and takes proper measures in terms of awareness campaigns, activities, webinars, seminars, etc.
Does Environmental Ambient Air Quality Monitoring conducted by the Institute?	Yes, half yearly monitoring is done by the NABL approved Laboratory
Does Environmental Water and Wastewater Quality monitoring conducted by the Institute?	Yes, half yearly monitoring is done by the NABL approved Laboratory
Does stack monitoring of DG sets conducted by the Institute?	Yes, half yearly monitoring is done by the NABL approved Laboratory
Is any warning notice, letter issued by state government bodies?	No
Does any Hazardous waste generated by the Institute?	Yes, it is being disposed though the authorized external agency. (Biotic Waste limited)

1.6 General Information

Does your institute have any rules to protect the environment? List possible rules you could include.	The institution is a Swachhta action plan institute. It follows the 5 parameters of Swachhta (i) Energy Management (ii) Water management (iii) Sanitation and Cleanliness (iv) Greenery Management (v) Waste management. The University received certificate due to the efforts made by the students, faculty members, and staff to promote and implement Swachhta on the campus.
Are students and faculties aware of environmental cleanliness ways? If Yes Explain	SGT University creates awareness through activities, Webinars, cleanliness drives in the community.
Does Important Days Like World Environment Day, Earth Day, and Ozone Day etc. eminent in Campus?	Yes, World Environment Day, Ozone Day, Earth Day, Earth Hour and more are celebrated on campus. Furthermore, SGT University organizes different activities such as a workshop on –Renewable Energy, a webinar on Geo-informatics for Environmental Conservation and Management and 'Water Conservation and Environmental Sustainability, activity on - The Best out of Waste, Various plantation drives of native plants, etc.
Does Institute participate in the National and Local Environmental Protection Movement?	Yes, SGT University is actively participating in environment protection movements like Swatch Bharat Abhiyan by students at the campus
Does Institute have any Recognition or certification for environment friendliness?	Yes. SGT University has received recognitions and certifications like a Certificate of I Guage, ISO 14001:2015, and letters from the village sarpanch for their awareness initiatives, cleanliness and plantation drives.
Does Institution conduct a green or environmental audit of its campus?	This is the sixth time; university has carried out external audit.
Has the institution been audited /accredited by any other agency such as NABL, NABET, TQPM, NAAC etc.?	Yes, University is accredited NAAC A+, NABH, NABL, IGBC

Green Initiatives By campus

- **Solid Waste Management**
  - University does composting for horticulture waste
  - Reduce the use of paper by supporting the digitization of attendance and internal assessment records.
  - Reduce the requirement of printed books by updating the e-books and e-journals collection of the University library.
  - Take initiatives to spread awareness amongst students about food wastage and ways of minimizing it
  - The habit of reusing and recycling non-biodegradable products
  - Organizing workshops for students on solid waste management.
  - There is a ban on single-use plastic and plastic crockery in the campus.
  - Systematically engage with the 3Rs of environment friendliness (Reduce, Reuse and Recycle).
- **Liquid Waste Management**
  - Maintain leakproof water fixtures.
  - Minimize the use of water by constructing more Indian-style toilets instead of Western-style toilets.
  - Continued employment of a caretaker to take immediate steps to stop any water leakage through taps, pipes, tanks, toilet flush etc.
  - Reuse of wastewater generated by the Reverse Osmosis (RO) system in washrooms**.**
- **E-waste Management**
  - The University has a separate storeroom for the safe storage of electronic waste. Periodically, the University disposes of e-waste through an auction process to concerned agencies.
- **Waste Water Management**
  - The University has two Sewage Treatment Plants (STP) with a capacity of 275 KLD.
  - There are two Effluent Treatment Plant (ETP) units with capacities of 40 KLD and 10 KLD respectively.
- **Renewable Energy**
  - A solar power plant with a capacity of 910 KW is installed on the building roof, supplying approximately 20% of the campus's total power.
  - Solar water heaters are installed on campus.
  - The University is using solar lights for street lights
- **Tree Plantation Drives**

- Five plantation drives were conducted, with a total of 113,182 trees, ornamental plants, and hedge plants planted this financial year, achieving a survival rate of more than 80%.

- **Air Pollution Reduction**
  - Personal vehicles belonging to students are not allowed on campus to reduce air pollution.
- **Rainwater Harvesting**
  - SGT University has 12 traditional rainwater harvesting units and an additional 12 units with modular filters.

Recommendations

- **Adopt Green Building Guidelines**: Future expansion projects of the University should comply with the Energy Conservation Building Code (ECBC).

- **Promote Recycling Education**: Conduct webinars and campaigns to increase recycling awareness and practices on campus.

- **Collaborate with Community and NGOs**: Work with community groups and non-governmental organizations to develop solutions to environmental issues.

- **Maintain AC and DG Units:** Implement a periodic maintenance schedule for air conditioning (AC) and diesel generator (DG) units to achieve optimized efficiency.

- **Sanitary Waste Disposal:** Provide facilities for sanitary waste disposal in accordance with the Central Pollution Control Board (CPCB) guidelines and Solid Waste Management Rules, 2016.

- **Water Metering**: Implement water metering records to facilitate water auditing and balancing.

- **Reduce Carbon Emissions:** Implement strategies to reduce power consumption, thereby decreasing carbon emissions.

Conclusion

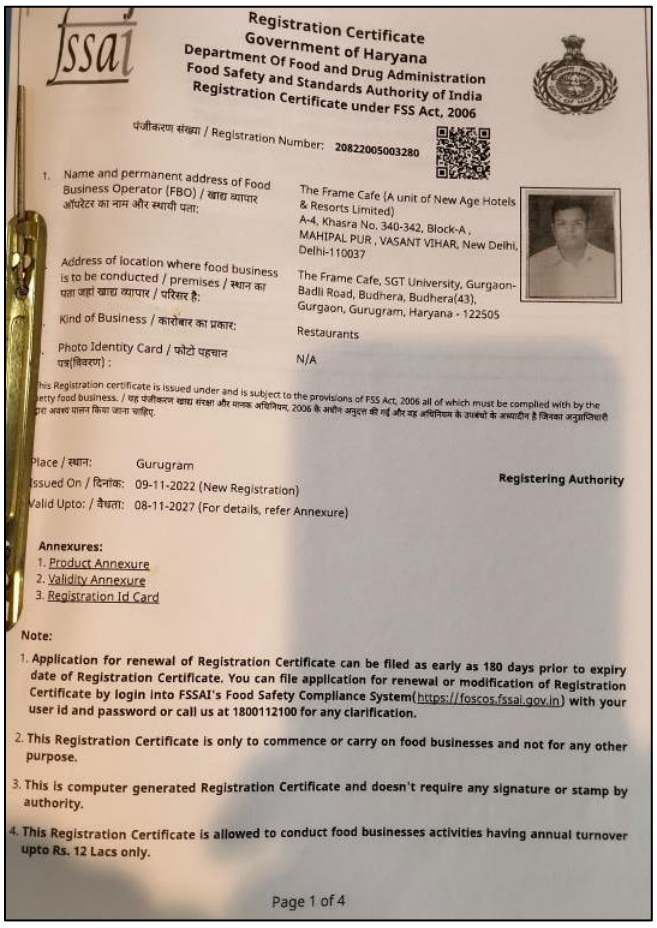
This audit involved extensive consultations with all campus teams and interactions with key personnel on a wide range of environmental issues. The University is devoted to promoting environmental management and conservation both on campus and within the community. The audit has identified several suggestions for making the campus premises more environmentally friendly. These recommendations are provided for the university campus team to initiate actions.

The audit team opines that the overall site is well-maintained from an environmental perspective. The recommendations in this report highlight numerous ways in which the university can improve its actions and become a more sustainable institution.

References:

- The Environment [Protection] Act – 1986 (Amended 1991) & Rules-1986 (Amended 2010)
- The Petroleum Act: 1934 – The Petroleum Rules: 2002
- The Central Motor Vehicle Act: 1988 (Amended 2011) and The Central Motor Vehicle
- Rules:1989 (Amended in 2005)
- Energy Conservation Act 2010.
- The Water [Prevention & Control Of Pollution] Act – 1974 (Amended 1988) & the Water (Prevention & Control of Pollution) Rules – 1975
- The Air [Prevention & Control Of Pollution] Act – 1981 (Amended 1987) The Air (Prevention & Control of Pollution) Rules – 1982
- The Gas Cylinders Rules – 2016 (Replaces the Gas Cylinder Rules – 1981
- E-waste management rules 2016
- Electrical Act 2003 (Amended 2001) / Rules 1956 (Amended 2006)
- The Hazardous Waste (Management and Handling and Trans-boundary Movement) Rules, 2008 (Amended 2016)
- The Noise Pollution Regulation & Control rules, 2000 (Amended 2010)
- The Batteries (Management and Handling) rules, 2001 (Amended 2010)
- Relevant Indian Standard Code practices

Annexure I – Environmental Recognition and Compliance



Registration Certificate
Government of Haryana
Department Of Food and Drug Administration
Food Safety and Standards Authority of India
Registration Certificate under FSS Act, 2006

पंजीकरण संख्या / Registration Number: 20822005003280

1. Name and permanent address of Food Business Operator (FBO) / खाद्य व्यापार ऑपरेटर का नाम और स्थायी पता: The Frame Cafe (A unit of New Age Hotels & Resorts Limited) A-4, Khasra No. 340-342, Block-A , MAHIPAL PUR , VASANT VIHAR, New Delhi, Delhi-110037

2. Address of location where food business is to be conducted / premises / स्थान का पता जहां खाद्य व्यापार / परिसर है: The Frame Cafe, SGT University, Gurgaon-Badli Road, Budhera, Budhera(43), Gurgaon, Gurugram, Haryana - 122505

3. Kind of Business / कारोबार का प्रकार: Restaurants

4. Photo Identity Card / फोटो पहचान पत्र(विवरण) : N/A

This Registration certificate is issued under and is subject to the provisions of FSS Act, 2006 all of which must be complied with by the ...erty food business. / यह पंजीकरण खाद्य संरक्षा और मानक अधिनियम, 2006 के अधीन अनुरूप की गई और यह अधिनियम के उपबंधों के अध्यधीन है जिनका अनुपालिधारी ...रा अवश्य पालन किया जाना चाहिए.

Place / स्थान: Gurugram
Issued On / दिनांक: 09-11-2022 (New Registration)
Valid Upto: / वैधता: 08-11-2027 (For details, refer Annexure)

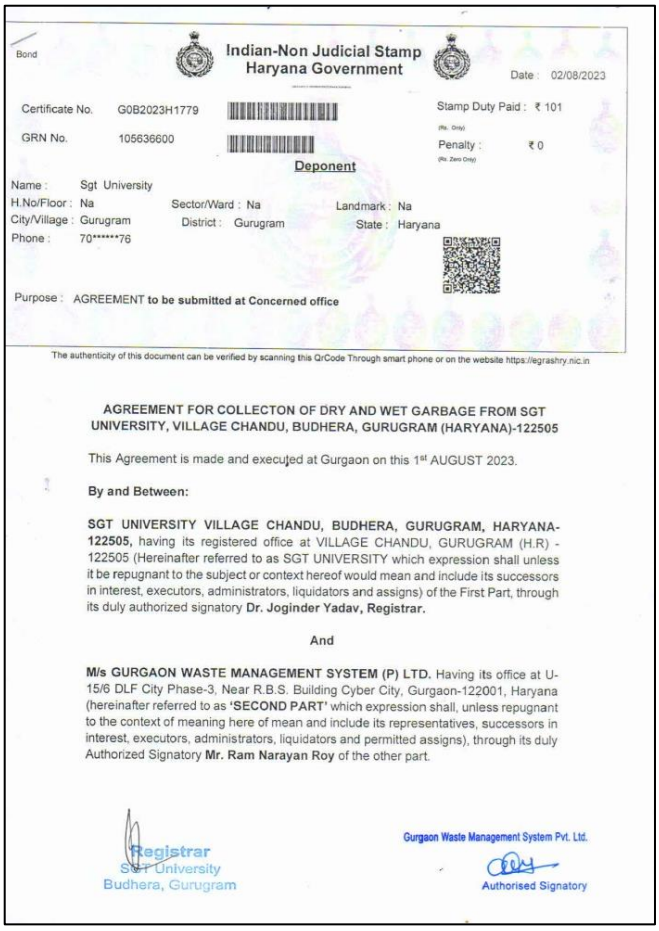
Registering Authority

Annexures:
1. Product Annexure
2. Validity Annexure
3. Registration Id Card

Note:
1. Application for renewal of Registration Certificate can be filed as early as 180 days prior to expiry date of Registration Certificate. You can file application for renewal or modification of Registration Certificate by login into FSSAI's Food Safety Compliance System(https://foscos.fssai.gov.in) with your user id and password or call us at 1800112100 for any clarification.
2. This Registration Certificate is only to commence or carry on food businesses and not for any other purpose.
3. This is computer generated Registration Certificate and doesn't require any signature or stamp by authority.
4. This Registration Certificate is allowed to conduct food businesses activities having annual turnover upto Rs. 12 Lacs only.

Page 1 of 4

FSSAI Certificate



Bond

Indian-Non Judicial Stamp
Haryana Government

Date : 02/08/2023

Certificate No. G0B2023H1779
GRN No. 105636600
Stamp Duty Paid : ₹ 101
Penalty : ₹ 0

Deponent
Name : Sgt University
H.No/Floor : Na
Sector/Ward : Na
Landmark : Na
City/Village : Gurugram
District : Gurugram
State : Haryana
Phone : 70******76

Purpose : AGREEMENT to be submitted at Concerned office

The authenticity of this document can be verified by scanning this QrCode Through smart phone or on the website https://egrashry.nic.in

AGREEMENT FOR COLLECTON OF DRY AND WET GARBAGE FROM SGT UNIVERSITY, VILLAGE CHANDU, BUDHERA, GURUGRAM (HARYANA)-122505

This Agreement is made and executed at Gurgaon on this 1st AUGUST 2023.

By and Between:

SGT UNIVERSITY VILLAGE CHANDU, BUDHERA, GURUGRAM, HARYANA-122505, having its registered office at VILLAGE CHANDU, GURUGRAM (H.R) - 122505 (Hereinafter referred to as SGT UNIVERSITY which expression shall unless it be repugnant to the subject or context hereof would mean and include its successors in interest, executors, administrators, liquidators and assigns) of the First Part, through its duly authorized signatory **Dr. Joginder Yadav, Registrar.**

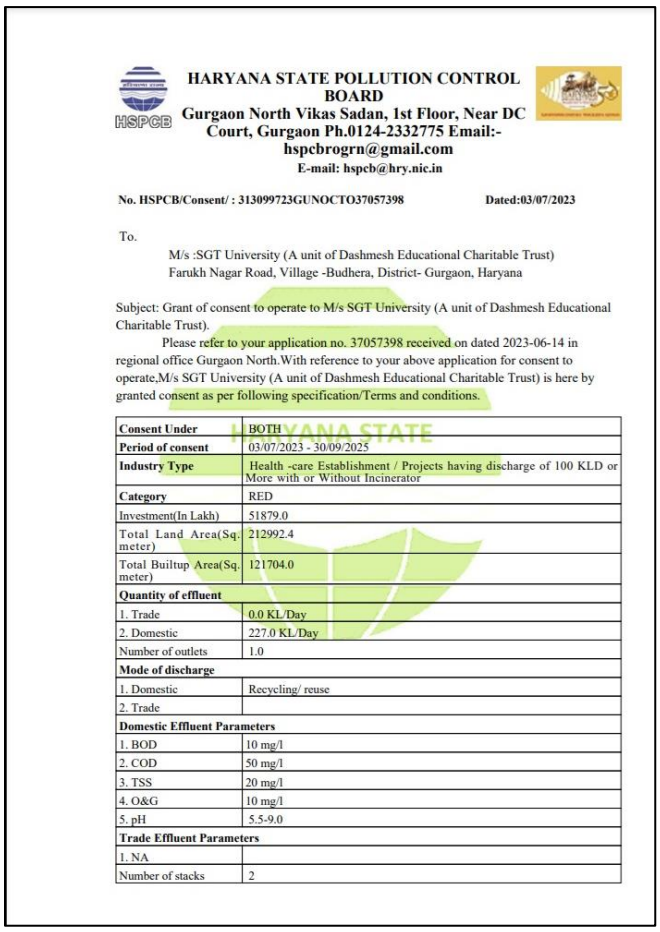
And

M/s GURGAON WASTE MANAGEMENT SYSTEM (P) LTD. Having its office at U-15/6 DLF City Phase-3, Near R.B.S. Building Cyber City, Gurgaon-122001, Haryana (hereinafter referred to as **'SECOND PART'** which expression shall, unless repugnant to the context of meaning here of mean and include its representatives, successors in interest, executors, administrators, liquidators and permitted assigns), through its duly Authorized Signatory **Mr. Ram Narayan Roy** of the other part.

Registrar
SGT University
Budhera, Gurugram

Gurgaon Waste Management System Pvt. Ltd.
Authorised Signatory

MOU with Gurgaon Waste Management System Ltd



HARYANA STATE POLLUTION CONTROL BOARD
Gurgaon North Vikas Sadan, 1st Floor, Near DC Court, Gurgaon Ph.0124-2332775 Email:- hspcbrogrn@gmail.com
E-mail: hspcb@hry.nic.in

No. HSPCB/Consent/ : 313099723GUNOCTO37057398 Dated:03/07/2023

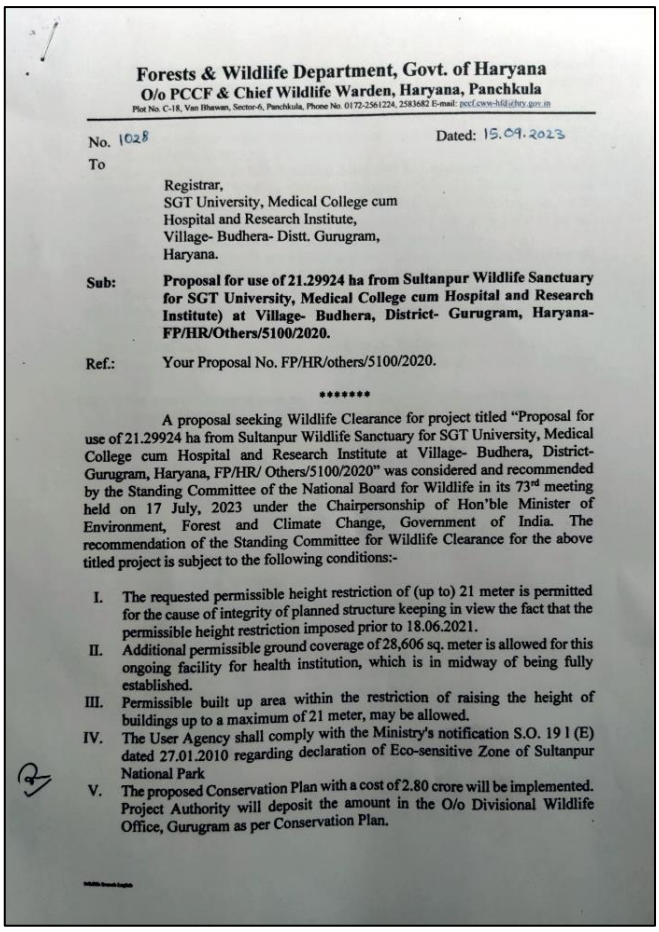
To.
M/s :SGT University (A unit of Dashmesh Educational Charitable Trust)
Farukh Nagar Road, Village -Budhera, District- Gurgaon, Haryana

Subject: Grant of consent to operate to M/s SGT University (A unit of Dashmesh Educational Charitable Trust).

Please refer to your application no. 37057398 received on dated 2023-06-14 in regional office Gurgaon North.With reference to your above application for consent to operate,M/s SGT University (A unit of Dashmesh Educational Charitable Trust) is here by granted consent as per following specification/Terms and conditions.

Consent Under	BOTH
Period of consent	03/07/2023 - 30/09/2025
Industry Type	Health -care Establishment / Projects having discharge of 100 KLD or More with or Without Incinerator
Category	RED
Investment(In Lakh)	51879.0
Total Land Area(Sq. meter)	212992.4
Total Builtup Area(Sq. meter)	121704.0
Quantity of effluent	
1. Trade	0.0 KL/Day
2. Domestic	227.0 KL/Day
Number of outlets	1.0
Mode of discharge	
1. Domestic	Recycling/ reuse
2. Trade	
Domestic Effluent Parameters	
1. BOD	10 mg/l
2. COD	50 mg/l
3. TSS	20 mg/l
4. O&G	10 mg/l
5. pH	5.5-9.0
Trade Effluent Parameters	
1. NA	
Number of stacks	2

Consent Grant from HSPBC



Forests & Wildlife Department, Govt. of Haryana
O/o PCCF & Chief Wildlife Warden, Haryana, Panchkula
Plot No. C-18, Van Bhawan, Sector-6, Panchkula, Phone No. 0172-2561224, 2583682 E-mail: pccf.cww-hfd@hry.gov.in

No. 1028 Dated: 15.09.2023

To
Registrar,
SGT University, Medical College cum Hospital and Research Institute,
Village- Budhera- Distt. Gurugram,
Haryana.

Sub: **Proposal for use of 21.29924 ha from Sultanpur Wildlife Sanctuary for SGT University, Medical College cum Hospital and Research Institute) at Village- Budhera, District- Gurugram, Haryana- FP/HR/Others/5100/2020.**

Ref.: Your Proposal No. FP/HR/others/5100/2020.

****

A proposal seeking Wildlife Clearance for project titled "Proposal for use of 21.29924 ha from Sultanpur Wildlife Sanctuary for SGT University, Medical College cum Hospital and Research Institute at Village- Budhera, District- Gurugram, Haryana, FP/HR/ Others/5100/2020" was considered and recommended by the Standing Committee of the National Board for Wildlife in its 73rd meeting held on 17 July, 2023 under the Chairpersonship of Hon'ble Minister of Environment, Forest and Climate Change, Government of India. The recommendation of the Standing Committee for Wildlife Clearance for the above titled project is subject to the following conditions:-

I. The requested permissible height restriction of (up to) 21 meter is permitted for the cause of integrity of planned structure keeping in view the fact that the permissible height restriction imposed prior to 18.06.2021.
II. Additional permissible ground coverage of 28,606 sq. meter is allowed for this ongoing facility for health institution, which is in midway of being fully established.
III. Permissible built up area within the restriction of raising the height of buildings up to a maximum of 21 meter, may be allowed.
IV. The User Agency shall comply with the Ministry's notification S.O. 19 1 (E) dated 27.01.2010 regarding declaration of Eco-sensitive Zone of Sultanpur National Park
V. The proposed Conservation Plan with a cost of 2.80 crore will be implemented. Project Authority will deposit the amount in the O/o Divisional Wildlife Office, Gurugram as per Conservation Plan.

Clearance letter From Forests & Wildlife Dept.

Annexure II - Photographs of Environment Consciousness

Well maintained campus

Well ventilated building

Lush green campus

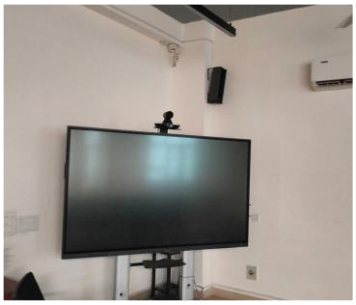
Paved Pathways

Color coded dustbins

Sprinklers for gardening

Ornamental plants in campus

Indoor plants in campus



Smart Classrooms

Plastic reused as Dustbins

Push Taps to save water

Airpurifying indoor plants

Urinals to save water

Awareness message display

Rainwater harvesting pit

Washing machines in hostel for water conservation

Solar Lights installed

Solar PV installed on building roof

Waste segregation for disposal

Sensor based LED light to save electricity

Bird-Nest for bio-diversity promotion

Pledge for environment

Awareness posters

Central Laundry at the campus

STP plant to treat wastewater

Desert cooler for small area

Third party agreement for waste disposal

END OF REPORT

SGT UNIVERSITY

Phone : 0124-2278183-85, Fax : 0124-2278151 Website : www.sgtuniversity.ac.in Email : info@sgtuniversity.org
Budhera, Gurugram-Badli Road, Gurugram (Haryana) – 122505