SUPPORTING DOCUMENTS FOR 7.1.6

Reports on Environment and Energy Audits

The following document contains information regarding quality audits on environment and energy periodically undertaken by the institution.

S. No.	Title of the Report	Page No.	Remarks
1.	Green Audit	1-51	**All merged reports are uploaded independently.**
2.	Energy Audit	1-34	
3.	Environment Audit	1-17	
4.	Certificates	1-14	

GREEN AUDIT

(Documents for Green Audit)

RBMSS

RELIABLE BUSINESS MANAGEMENT SUPPORT SYSTEM

IC-1/103; ESSEL TOWER; MG ROAD - GURGAON -122009

PHONE: 9811801520; 0124- 4111520

E-MAIL: RMMADHEKLAR@GMAIL.COM

05-NOV-2021

RELIABLE BUSINESS MANAGEMENT SUPPORT SYSTEM

Certificate for Green Audit

This is to certify that Global Group of Institutes,11th Km Stone, Sohian Khurd, Amritsar-Jammu Highway, NH-54, Amritsar – 143501, has adopted good practices to maintain good environment for saving mother earth.

We have successfully completed Green Audit for the whole campus for Academic Year 2021-22.

The activities and measures carried out by the Institutes have been verified and found to be good.

The efforts put by Faculty, Staff and Students towards minimizing waste for preservation of Environment is highly appreciable.

R.B.madhekar

CEO - RBMSS

RBMSS

GREEN & ENVIRONMENT AUDIT REPORT

AY 2020-21

INTERNAL QUALITY ASSURANCE CELL

(IQAC)

Global Group of Institutes

11th km Stone, Sohian Khurd, Amritsar-Jammu Highway, NH-54, Amritsar (Punjab) 143501

Green & Environment Audit Assessment Team

(Internal)

- Dr. Jasbir Singh Bal, Department of Agriculture
- Dr. Monika Arora, Department of Business Administration
- Dr. Aman Soi, Department of Mechanical Engineering
- Dr. Neetu Sharma, Department of Applied Sciences
- Prof. Harleen Kaur, Department of Civil Engineering

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- Dr. Bikram Singh Gill, Asso. Director, KVK, Jahangir,Amritsar
- Dr.Kamaljeet Singh, Khalsa College, Amritsar
- Dr. Gurbaksh Singh, Khalsa College, Amritsar
- Dr. Amarjeet Kaur, Khalsa College, Amritsar

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INTRODUCTION

GREEN & ENVIRONMENT AUDIT

Green & Environment Audit is a systematic approach for identification, quantification, recording, reporting and analysis of components of environmental diversity of various establishments. Its aim is to analyze environmental practices within and outside of the campus sites, which will have an impact on the eco-friendly ambience.

This can be a useful tool for the Institutes to determine how and where they are using the most energy or water or resources. The institutes can then optimize and implement the changes leading to financial savings. It is helpful to determine the type and volume of waste, which may be used for recycling. It can create health consciousness and promote environmental awareness, values and ethics. It provides staff and students better understanding of Green impact on campus. Thus it is imperative that the institutes evaluate its own contributions toward a sustainable future to become an increasingly important issue for the higher educational institutions.

Main Objective of Green & Environment Audit

- Geographical Location
- Meteorological parameter
- Ambient Environmental Condition
- Waste disposal system
- Floral and Faunal diversity
- Energy Consumptions
- Awareness and Training on Sustainability for Students

METHODOLOGY

The methodology adopted for this Audit was a three step process comprising of:

1. **Data Collection** – The exhaustive data collection was performed considering different parameters such as observation, survey communicating with responsible persons and measurements.

Following steps were taken for data collection:

- The team visited each department, Library, gardens, canteen, campus etc.
- Data on the general information was collected by observation and interactions.
- Plants were identified using standard taxonomic books.
- The average power consumption of various appliances was recorded.
- Waste generated was measured directly at the source of production.

2. **Data Analysis** – Various parameters such as computation of energy consumption, consumption of electricity of the campus were analyzed in detail considering the tariff plan provided by the Punjab State Power Corporation Limited (PSPCL). Data related to usage of water was also analyzed using appropriate terminology.

3. **Recommendation** – On the basis of results of data analysis and observations, required steps were recommended for reduction in power, water consumption and also for the waste treatment methods.

ABOUT THE INSTITUTES

Global Group of Institutes have been founded by Dr. B. S. Chandi and Dr. Akashdeep Singh Chandi, who have the vision for creating a truly world class institutes which will cater to the needs of Indian and Overseas Industry, Research and Educational Institutions. Global Group of Institutes have tremendously grown since their inception in 2008 and are well known for imparting the Quality Education in the region.

Global Group of Institutes have always been leading from the front by prominent academicians as Directors and Senior faculty, educated and experienced from ISRO, IISc, IITs, NITs etc. The Institutes offer Undergraduate and Post Graduate Programmes in the field of Engineering, Management, Pharmacy and Computer Applications. These institutes are approved by All India Council for Technical Education, Pharmacy Council of India and affiliated with IKG-Punjab Technical University Jalandhar.

We had undergone accreditation of highest level like NAAC, NBA which ensures the balance between high academic quality and professional relevance and the needs of the corporate world are well integrated into programmes, activities and processes.

Following Institutes have been merged and renamed as **Global Group of Institutes** as per AICTE 2019-2020.

1.Global Institute of Management & Emerging Technologies (Estd. 2008, For B.Tech, M.Tech, MBA & MCA)
2.Global Institute of Management (Estd. 2008, for MBA, BBA, BCA, B.Com(Hons), Airlines Tourism, Hotel Management, Agriculture, MLS)
3.Global Institute of Pharmacy (Estd. 2018 for Pharmacy)

LUSH GREEN CAMPUS

VISION & MISSION

"To achieve a position of leadership among technical and management Institutes in providing meaningful, relevant and character building education, providing equal opportunities to every section irrespective of race, ethnic group and gender".

Vision

To emerge as a leader among professional Institutions in providing meaningful, relevant and character building education and to provide equal opportunity to everyone, irrespective of race, gender and ethnic group. Sikh Guru Sahiban's 'Sarbat Da Bhala' (Welfare for all) shall be the guiding force for Global (Group of) Institutes.

Mission

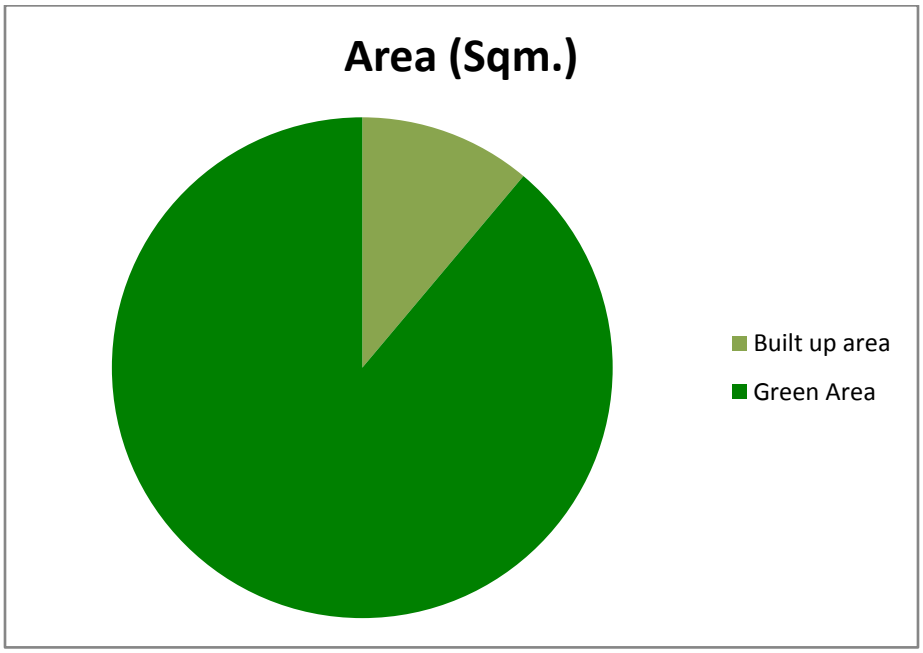
- Providing affordable high quality, professional education to the youth, with a special focus on values.
- Preparing students intellectually and psychological to face the challenges of the globalized environment.
- To promote and encourage research in engineering, science and management.

The Institutes have been set up with the following objectives:

- To provide value based professional education and to inculcate not only technical skills but right values and attitude also.
- To prepare the students for professional challenges both at national as well as at global level and also to prepare them for global placements.
- To promote and develop research in pure as well as applied domains of various subjects for the benefit of academia.
- To emerge as a center of excellence in technical and management education competing neck-to-neck with the similar institutions at national as well as global level.
- To promote entrepreneurship as envisioned by our former President of India Dr. APJ Abdul Kalam.

LAND USE DETAILS

Type of Area	Area (Sqm.)
Built up area	11257.39
Green Area	89913.61
Total Area	101171



INFRASTRUCTURE

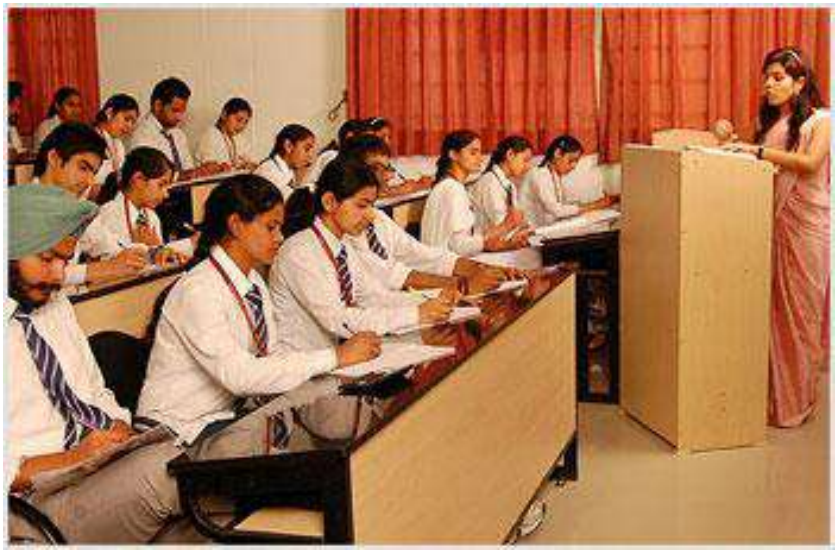
Global Group of Institutes spread across 25 acres of lush green surroundings along with beautifully architectured majestic buildings. Academic Infrastructure of the Institute includes Classrooms, Computer Labs, Engineering Labs, Pharmacy/Medical Science Labs, Agriculture Labs, Workshops, Digital Communication Skills Lab and four Conference Halls equipped with latest audio–visual aids.

BLOCK WISE

Sr No.	BLOCK	NO. OF FLOORS
1	Newton	4
2	Einstein	4
3	Admin	3
4	Pharmacy	3.5
5	Hotel Management	4
6	Agriculture	1
7	Admission Cell	1
8	Girls Hostel	4
9	Boys Hostel-1	5
10	Boys Hostel-2	8

ROOMS DETAIL

Sr No.	Room Name	Number
1	Classrooms	61
2	Laboratories	84
3	Seminar Halls	4
4	Video Centre	07
5	Auditorium	01(400 capacity)
6	Library	02
7	Girls Common Room	01
8	Boys Common Room	01
9	Global Café	01
10	First Aid Room	01



MODERN CLASSROOM

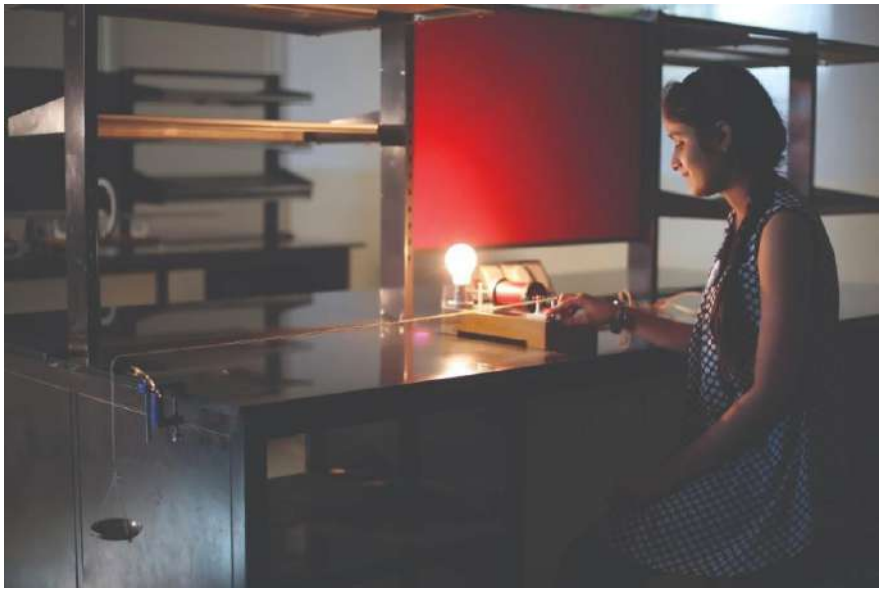
ME LAB

ECE LAB

CSE LAB

COMMUNICATION SKILLS LAB

CHEMISTRY LAB



PHYSICS LAB

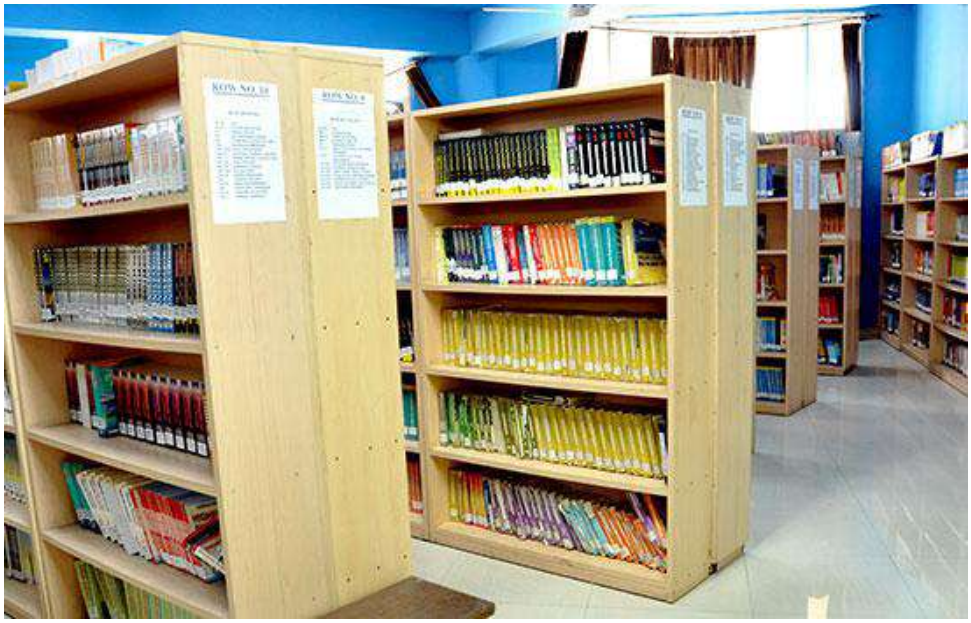
AGRICULTURE LAB

HMCT LAB

PHARMACY LAB

SEMINAR HALL

ULTRA MODERN AUDITORIUM



LIBRARY-1

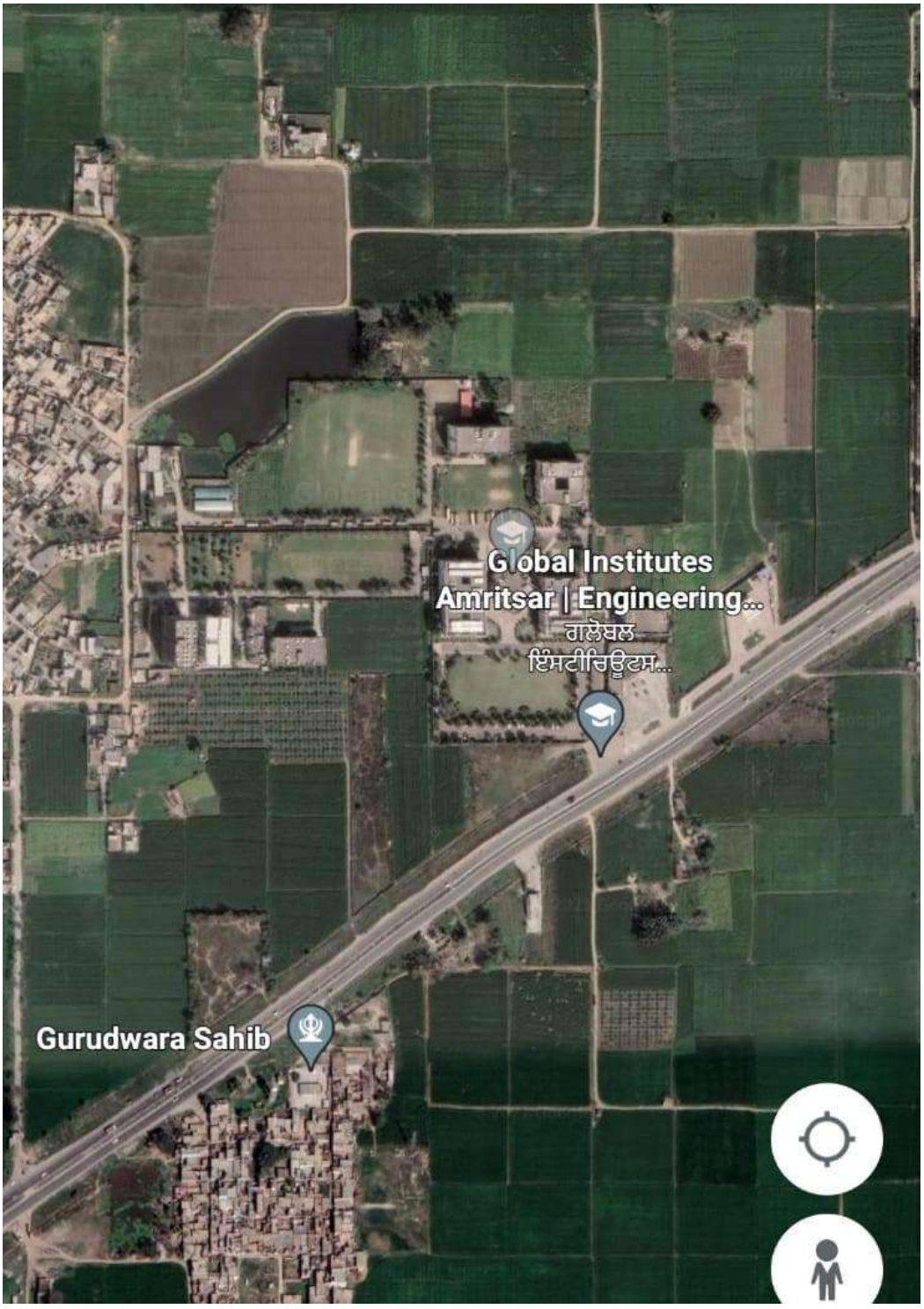
LIBRARY-2

GEOGRAPHICAL LOCATION WITH CAMPUS MAP IN SCALE

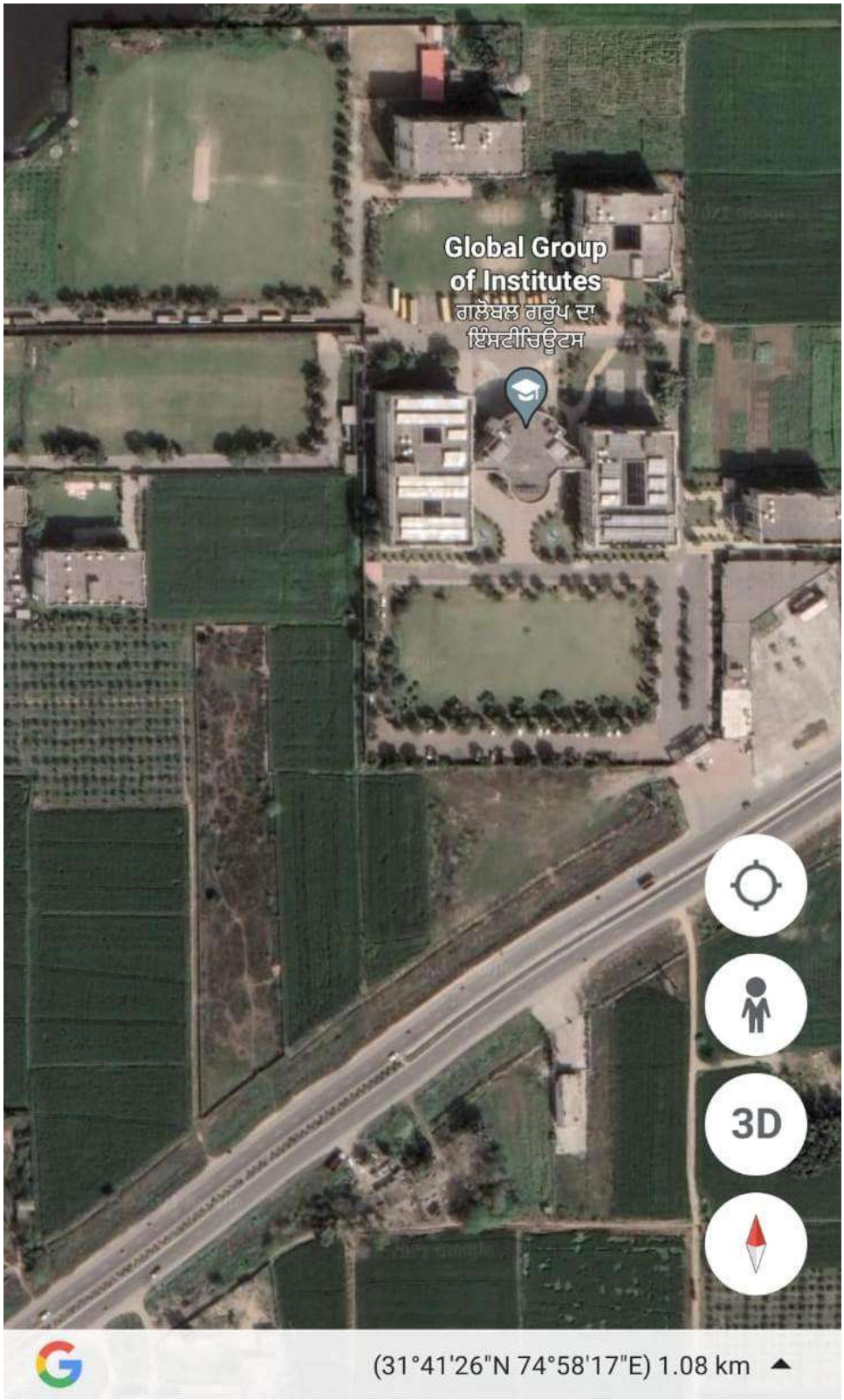
The campus is located at Amritsar-Batala- Jammu Highway NH-54. It is about 11Km from Amritsar Bus Terminus. It comprises of 25 acres of lush-green land surrounded by green fields all over providing pollution-free environment best suited for learning. The campus is on the national highway, where the conveyance is available for 24×7. However, the institute provides own transport facility to the students from Amritsar, Batala, Gurdaspur, Fatehgarh Churian, Dera Baba Nanak, Mehta, Tarn Taran, Ajnala and other nearby areas.

Distance

- 11 Km from Amritsar Bus Terminus
- 12 Km from Railway Station
- 16 Km from Amritsar International Airport
- 25 Km from Batala
- 29 Km from Mehta
- 30 Km from Ajnala
- 31 Km from Fatehgarh Churian
- 35 Km from Tarn Taran
- 45 Km from Dera Baba Nanak
- 55 Km from Gurdaspur
- 80 Km from Jalandhar
- 142 Km from Ludhiana
- 95 Km from Pathankot
- 190 Km from Jammu
- 228 Km from Chandigarh



AERIAL VIEW-1 OF GGI CAMPUS



AERIAL VIEW-2 OF GGI CAMPUS

TREE DIVERSITY

Variety of Trees (Medicinal and Value added once) are important components of vegetation, therefore must be constantly monitored and managed in order to maintain species and habitat diversity.

In the Institutes, approximately 1,53,000 trees and plants have been planted for providing healthy environment to the students.

The list of common special plants is as below:

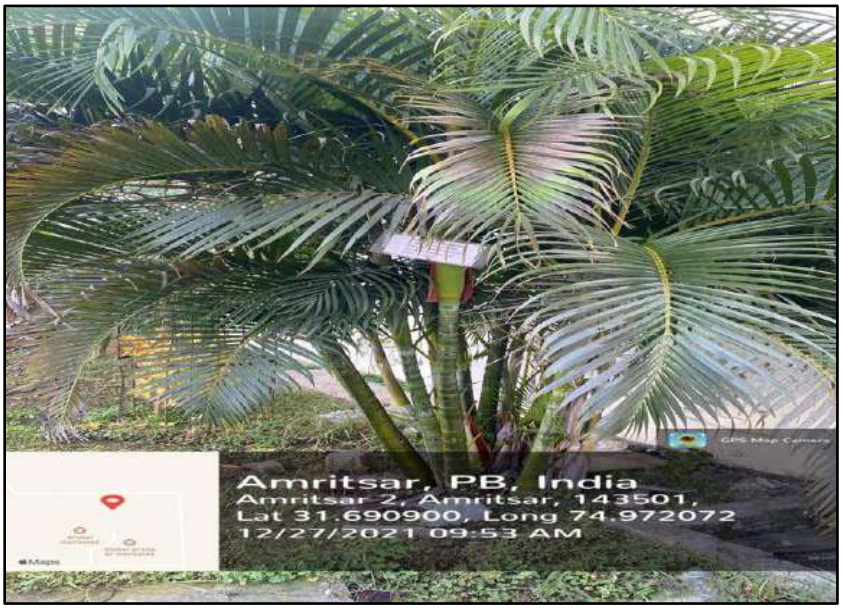
Sr. No.	Common Name	Number
1	Green Ficus	245
2	Yellow Ficus	201
3	White ficus	212
4	China Palm	74
5	Date (Eatable)	25
6	Bottle Brush (Yellow)	50
7	Bottle Palm	52
8	Date Palm	20
9	Silver Oak	62
10	Sagwan	42
11	Calendra	23
12	Kejuna	26
13	Havelia	45
14	Chel	32

15	Mango	21
16	Tikoma	26
17	Mashi Palm	12
18	Pioneer Palm	13
19	Granta	18
20	Chandni	46
21	Electronia	15
22	Kangi Palm	16
23	Kusum	26
24	Indoor Palm	42
25	Lovelina	17
26	Valeti Rose	38
27	Funkeria	25
28	Motia	36
29	Chakrasia	21
30	Silver Palm	44
31	Lal Tania	24
32	Kela Palm	25
33	Bamboo	26
34	Gulmohar	18
35	Ragis Palm	23
36	Kikar (Babul)	29
37	Sukhchain	32
38	Rubber Plant	15

39	Kinnow	10
40	Neem	12
41	Safeda	52
42	Hibiscus	68
43	Bogounvillia	23
44	Kachnar (Yellow)	21
45	Rose	102
46	Tikoma	22
47	Panda plant	73
48	Raat ki Rani	50
49	Gulmohar	25

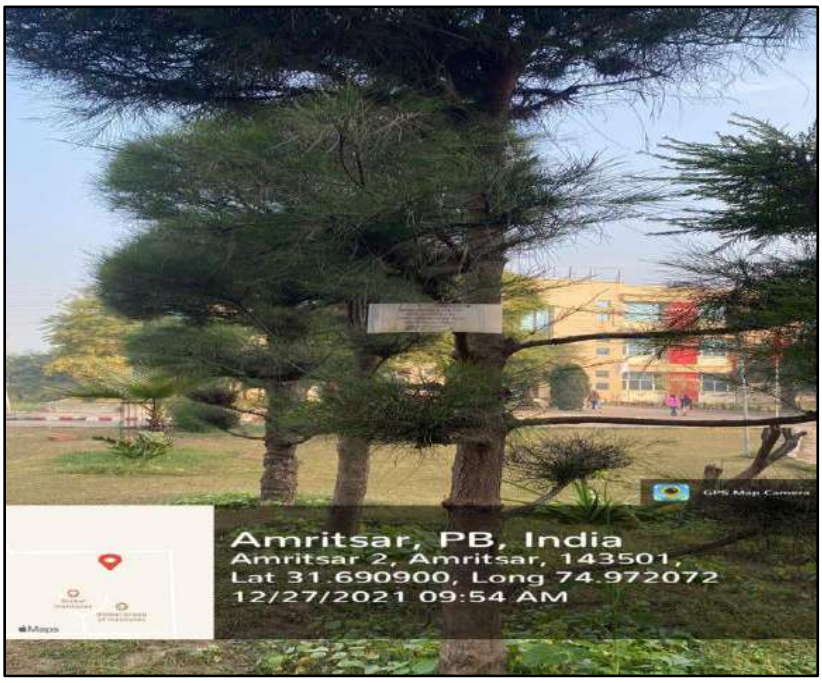
CHINA PALM

SILVER OAK

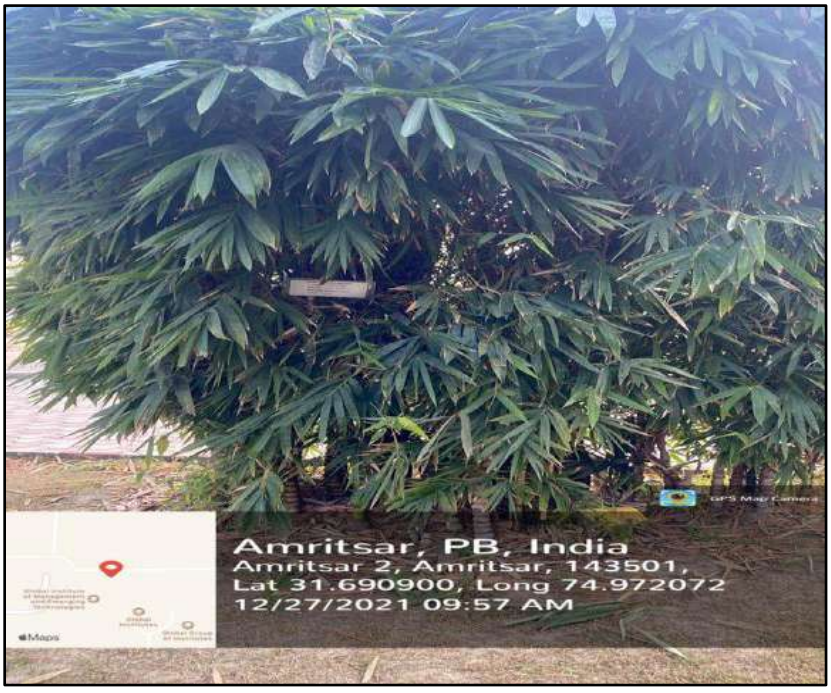


REGIS PALM

KANGI PALM



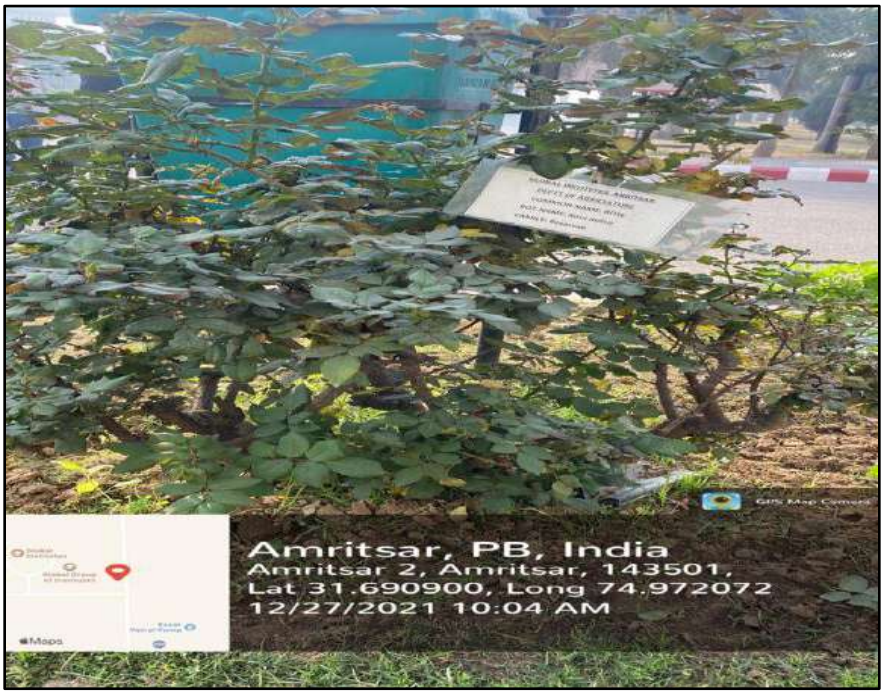
BOTTLE BRUSH



BAMBOO

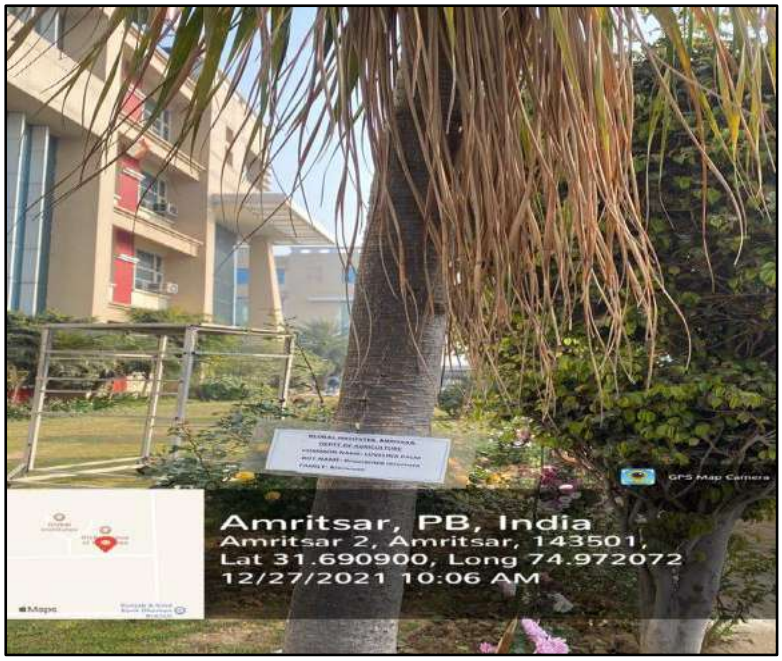

GPS Map Camera
Amritsar, PB, India
Amritsar 2, Amritsar, 143501,
Lat 31.690900, Long 74.972072
12/27/2021 09:59 AM
Maps

SAGWAN

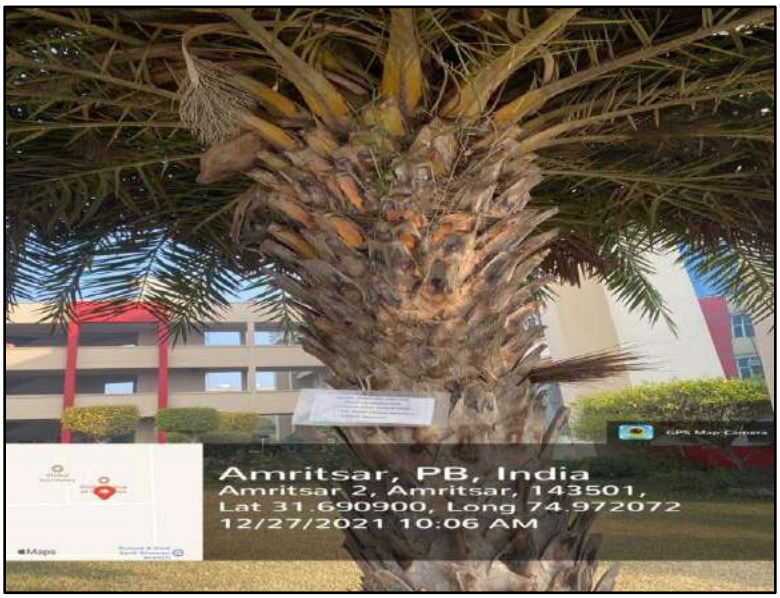

GPS Map Camera
Amritsar, PB, India
Amritsar 2, Amritsar, 143501,
Lat 31.690900, Long 74.972072
12/27/2021 10:04 AM
Maps

ROSE

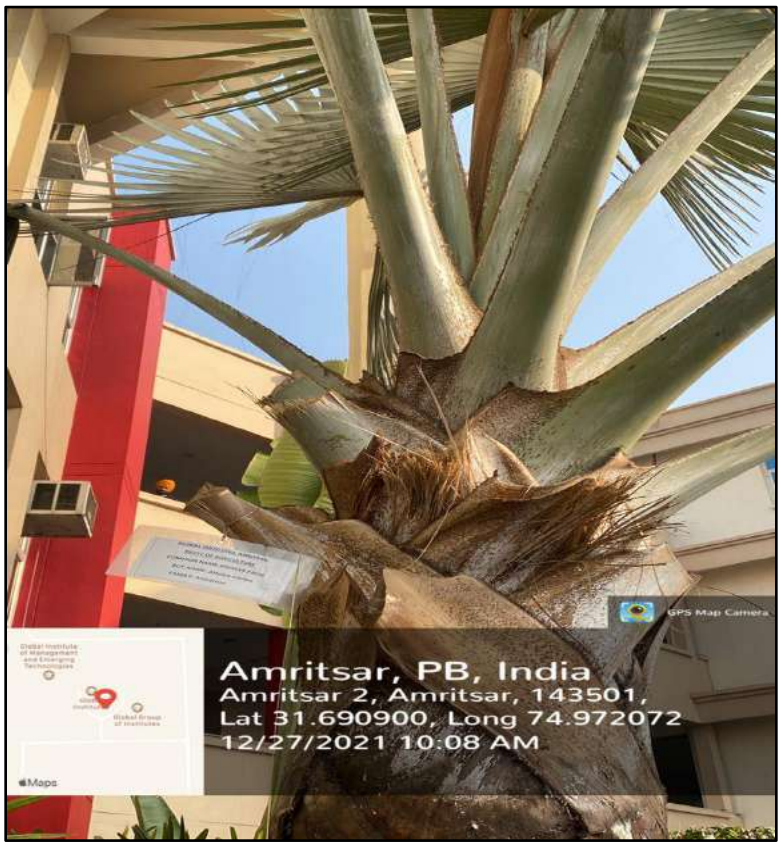
GREEN FICUS



LOVELINA PALM



DATE PALM



PIONEER PALM

JUNIPER

List of various activities which are regularly performed in the campus:

- Organic farming
- Paddy cultivation
- Engaging students in maintaining fishery pond
- Engaging students in maintaining herbal garden and medicinal garden.
- Mushroom cultivation
- Apiculture
- Flower arrangements
- Plastic free campaign
- Nature camps and field trips
- Participation of teachers in national green crops
- Initiation of vermicompost.
- Invited talks on environment sustainability

BEE KEEPING (APICULTURE)

FAUNAL DIVERSITY

The Institutes is located in Amritsar and has got extreme climates. The highest temperature is recorded 47 degree Celsius. The climatic condition of the Amritsar city is suitable for wide variety of flora and fauna to support its rich biodiversity. The faunal diversity of Global Group of Institutes campus has been studied and documented as below:

Common Name	**Scientific Name**
Bulbul	Molpastes cafer
Crow	Corvous Corone
Cuckoo	Cuculidae Cuculiformes
Dove	Columbidae Colombiformes
Eagle	Aquila Accipitridae
House Crow	Corvus splendens
House sparrow	Passer domesticus
Humming Bird	Triochilidae Apodiformes
Indian Parrot	Psittacula eupatria
Kiwi	Apteryx Apterygiformes
Koel	Eudynamis scolopaccus
Laysan albatross	Diomedea immutabilis
Myna	Acridotheres tristis
Owl	Nocturnalis Strigiformes
Parrot	Phaethontidae Psittaciformes
Pigeon	Columba livia
Sparrow	Ploceidae Passer
Butterfly	Rhopalocera
Earthworm	Lumbricina
Snake	Serpentes
Mongoose	herpestidae
Fish	Osteichthyes
Bees	Anthophila

SWALLOW TAIL

PARROT

PIGEON

SPARROW

BUTTERFLY

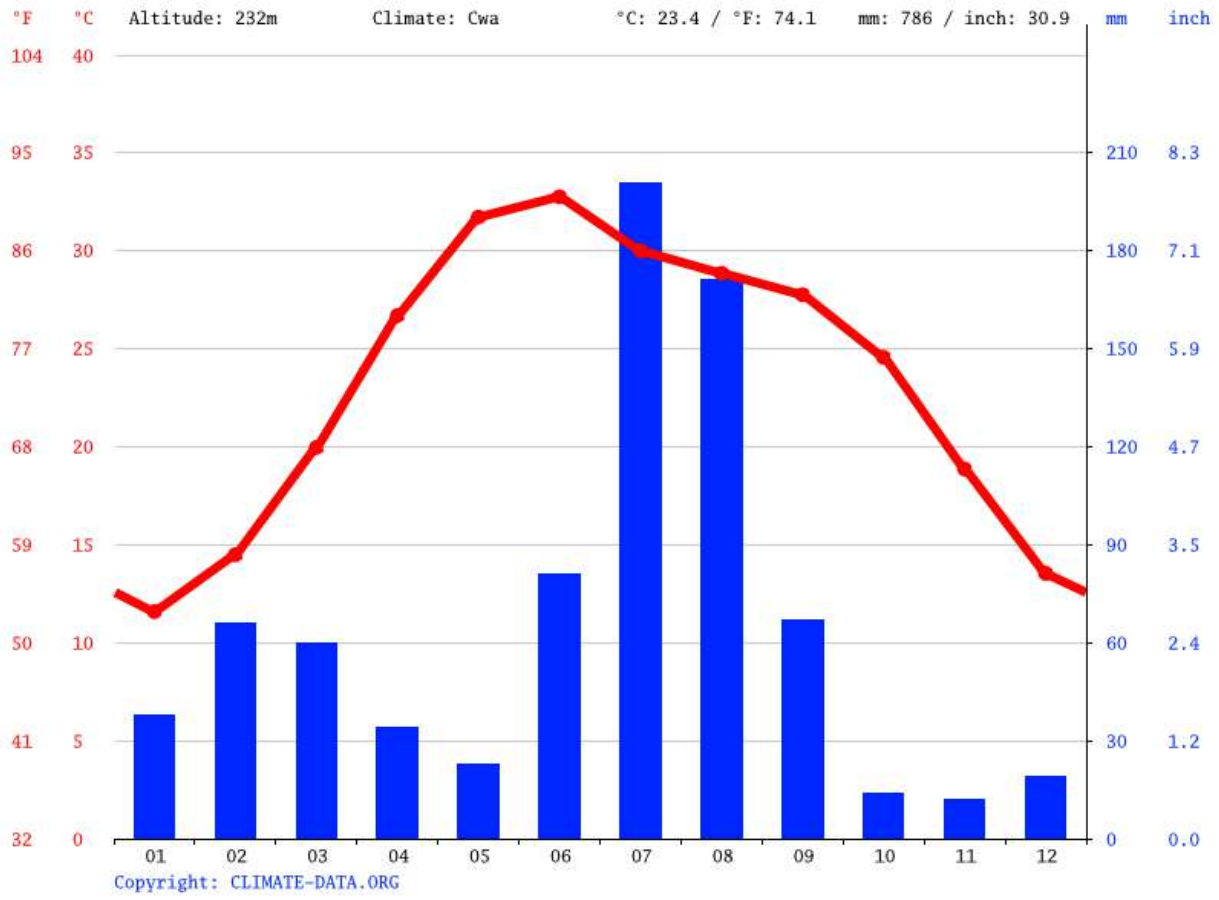
MYNA

CROW

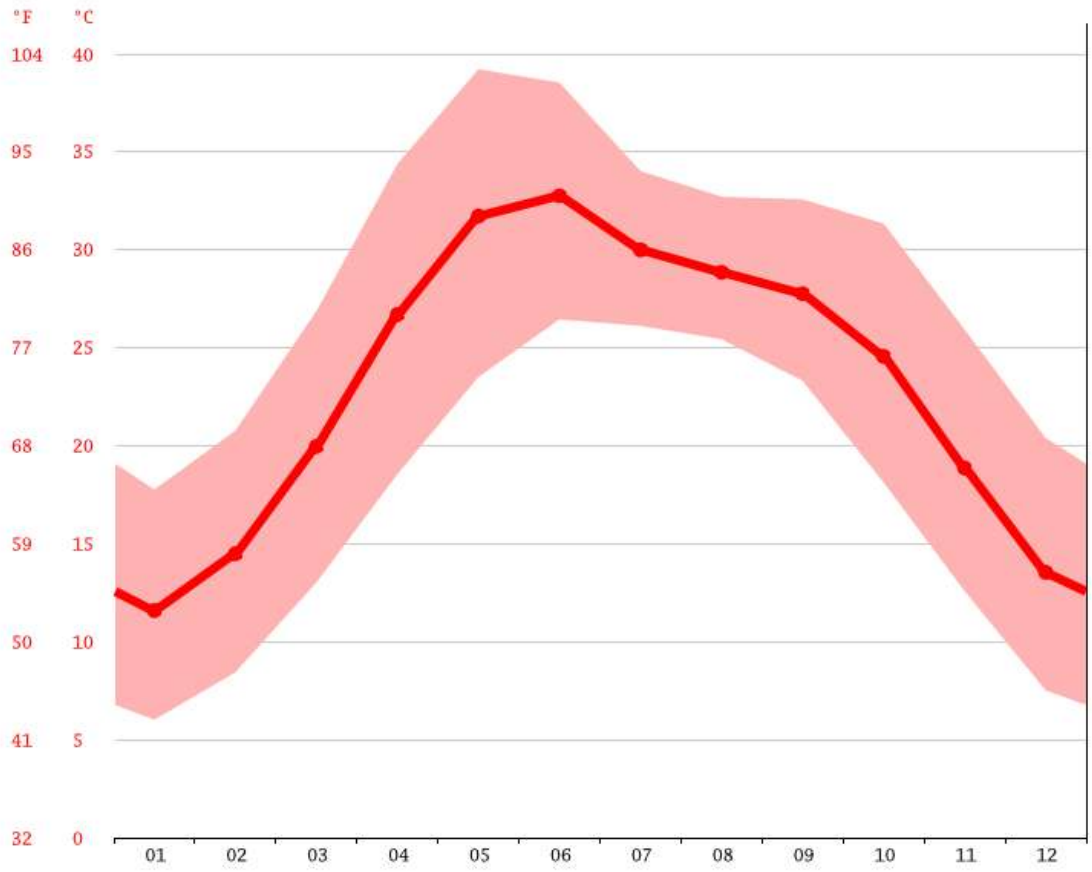
BAYA WEAVER

WEATHER DATA OF GLOBAL GROUP OF INSTITUTES

The climate in Amritsar is exhibiting both extremes i.e. Hot in summer and Cold in winter. There is much less rainfall in winter than in summer. According to Köppen and Geiger, this climate is classified as Cwa. The average annual temperature is 23.4 °C



Months ⟶


°F
°C
104
40
95
35
86
30
77
25
68
20
59
15
50
10
41
5
32
0
01
02
03
04
05
06
07
08
09
10
11
12

Months ⟶

AIR QUALITY

Air Quality of Amritsar city is satisfactory. The Institutes are situated on National Highway, 11km away from city.

AQI for SO_2 and NO_x parameters are within the range of Indian living standards. Various factors are responsible for this cleanliness, calmness and serenity in this area. Therefore, many trees have been planted in the campus due to which the air quality is better than Amritsar city.

AIR QUALITY INDEX

	23.3.20	23.3.19
Punjab	51	101
Khanna	43	70
Ludhiana	36	40
Amritsar	81	100
M Gobindgarh	54	160
Patiala	48	118
Jalandhar	46	117

401-500	SEVERE
301-400	VERY POOR
201-300	POOR
101-200	MODERATE
51-100	SATISFACTORY
0-50	GOOD

AIR QUALITY DETERMINATION

Satisfactory air quality index (OVERALL-61) was found in Global Group of Institutes, Amritsar on dated 19th August 2020.

Parameter	Result (Range)
NO_2	21.4μ/m^3
NO	10.12μ/m^3
O_3	30.49μ/m^3
$PM_{2.5}$	28.4μ/m^3
PM_{10}	77.5μ/m^3
CO	35.0 μ /m^3
Humidity	43%
Barometric Pressure	1015 millibar
Wind Speed	10-15 m/s
Sun Rise	05:58 AM
Sun Set	07:09 PM
Moon rise	06:52 PM
Moon set	07:41 AM

WATER ANALYSIS REPORT

Water quality testing is done for identifying the contaminants and to prevent water borne diseases. It is important to ensure that drinking water is safe, clean and free from bacteria and disease.

The following is a list of indicators often measured during water analysis:

- Alkalinity
- pH Value (6.875)
- Color of water
- Taste and odor (geosmin, 2-Methylisobomeol (MIB),etc.)
- Microorganisms such as fecal coliform bacteria (Escherichia coli), Cryptosporidium, and Giardia lamblia
- Dissolved salts and metals (Sodium, Potassium, Calcium, Sulphate, Magnesium, Carbon etc.)
- Dissolved metals and metalloids (lead, mercury, arsenic, etc.)
- Dissolved organics: colored dissolved organic matter (CDOM), dissolved organic
- Heavy metals

The results of water sample are as under:

Parameters	Test Remark	Standard Requirement
pH	**7.31**	**6.5-8.5**
TDS	**275**	**500**
Odour	**Ordourless**	
Taste	**Normal**	**Normal**
Turbidity (NTU)	**<1**	**1.0**
Chlorides (mg/l)	**23**	**250**
Sulphate (mg/l)	**5.52**	**45**
Total Hardness (as $CaCO_3$) (mg/l)	**216**	**300**
Iron	**Nil**	**0.3**
Magnesium (mg/l)	**17**	**30**
Zinc	**Nil**	**5**
Total Coliform	**Zero**	**Zero**

Water quality of Global Group of Institutes is fit for drinking purposes.

WASTE DISPOSAL

Moreover, the earth's supply of non-renewable resources is dwindling continuously. To incorporate environmental consciousness among people regarding consequences of human activities on environment, numerous initiatives have been taken by the institutes such as:

- **Solid Waste Management:** To make the campus litter-free, there is a ban on the littering and burning of solid waste in the campus. Routine checking is done to have strict compliance. Dustbin Stands are permanently installed at various places. This ensures that solid waste is segregated at the source. The Institutes have a tie up with local government approved solid waste management agency to lift the solid waste from the campus. Waste like paper, metals, glass, cardboard, newspaper and stationery are systematically collected, segregated and sold to authorize vendors for its recycling. Use of paper printed on one side is encouraged in office practices such as for sending fax, printing drafts before final document, memos and notes etc. Thus, an environmentally preferred alternative is exercised for reducing pollution.
-

Solid Waste Management

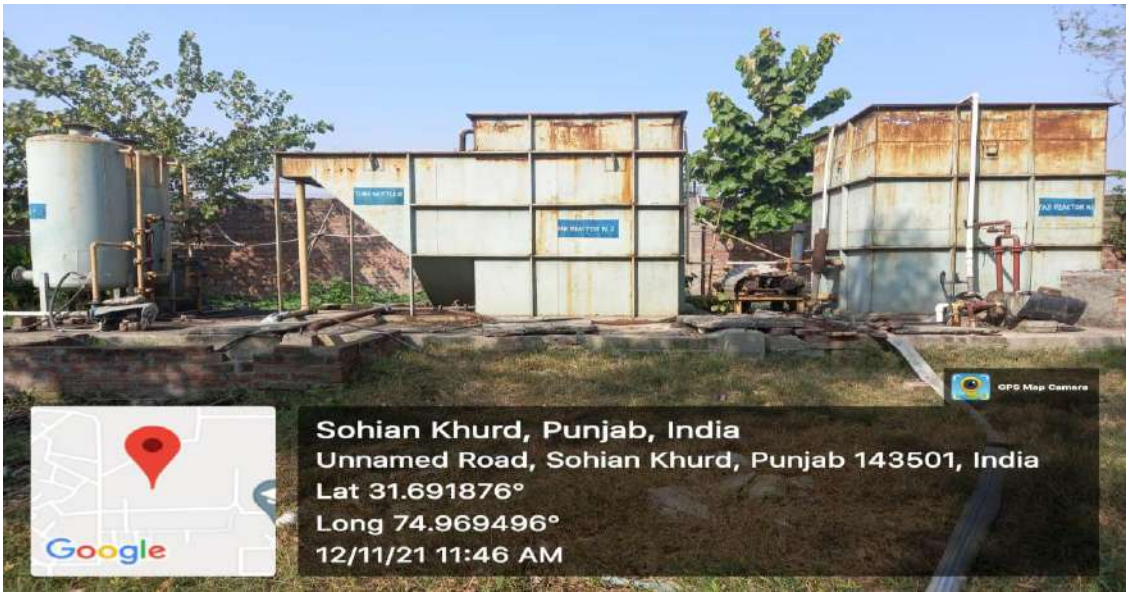
- **Liquid Waste Management:**

  Global Group of Institutes is very much committed to preserve environment in its entirety and disposal of waste system is maintained very nicely to keep the whole campus clean and green. The few glimpses are as under:

a. Sprinkler Irrigation: Uniform distribution of water and best efficiency is adopted through sprinkler irrigation.

Sprinkler Irrigation

b. Usage of Recycled Water: The institute has constructed a Sewerage Treatment Plant for the treatment of all the waste water. The treated water is stored in underground pits from where it is pumped to various lawns and grounds. Dedicated pipes have been laid for the irrigation of treated water.



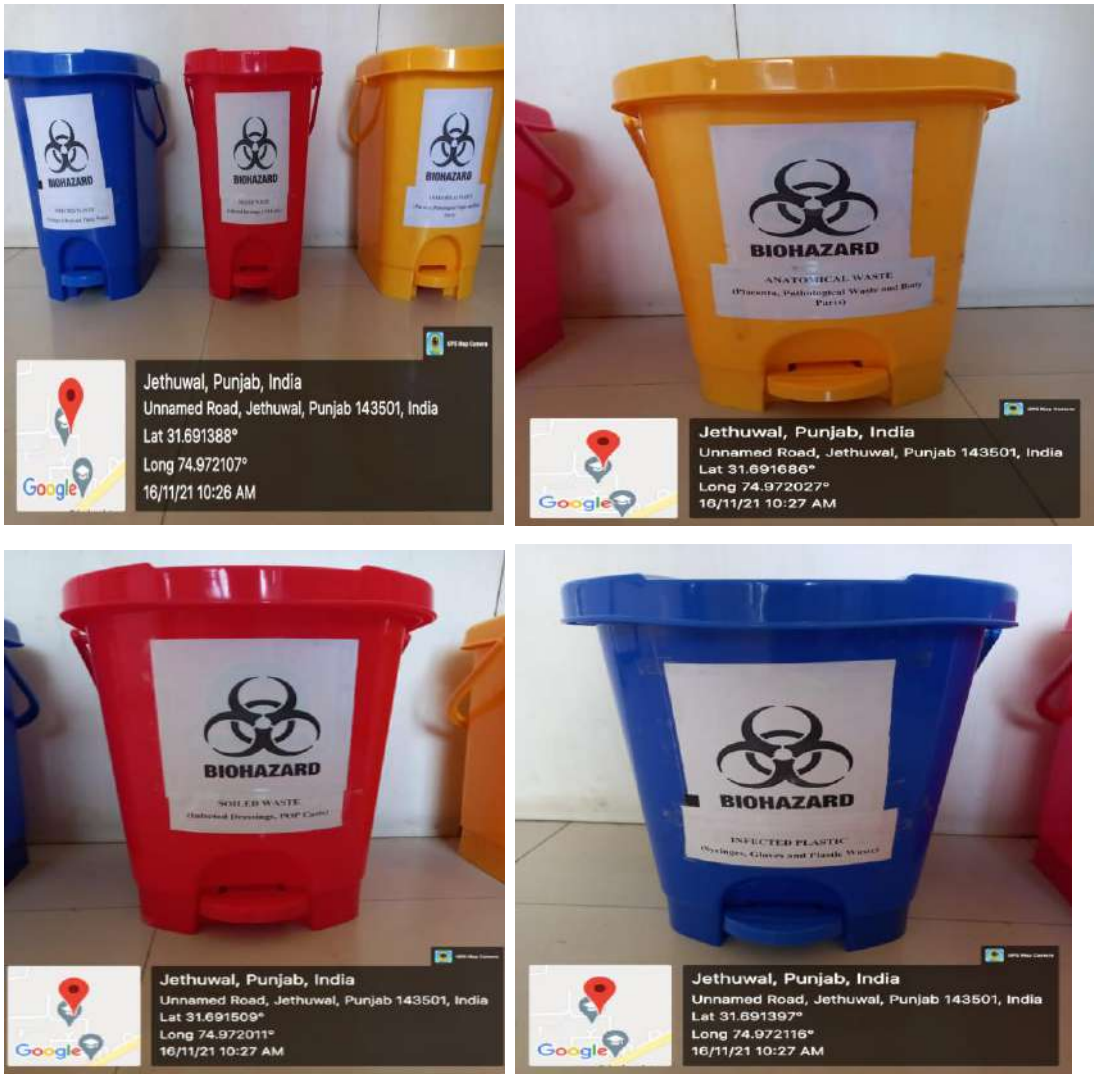
IN-HOUSE SEWERAGE TREATMENT

c. **Rain Water Harvesting**: Institutes has adopted a strategy for the collection of rainwater and storing it in the right way for future use.

d. E-Waste Management: The institute has a policy to take utmost care regarding e-waste management. Electronic gadgets are repaired for minor defects by our lab technicians to ensure its optimum utilization. The electronic waste components such as computer system components, CPU and ICs are used in practical demonstration to our students. The institute has a tie up with an agency named SHS Computers for e-waste handling of disposal of old LCD screens, Keyboards, Mouse, Processor, Motherboard and RAM etc.

Utilization of E-Waste

e. **Hazardous Chemicals and Radioactive Waste Management:** For biomedical waste there is a classification of the waste in hazardous and non-hazardous or infectious and other hazardous chemical particles. For the personal protection it has been advised to use masks while handling the waste. Moreover precautionary measures such as: eye covers, apron, gloves and boots etc. are adopted as they help in fighting the transmission of infection.



Segregation of Waste Materials

TRANSPORTATION AT GLOBAL GROUP OF INSTITUTES:

Catering to a large number of day-scholars, college runs a fleet of buses for the convenience of its students and faculty. Students are charged a subsidized transportation fee for this facility. Buses covers several routes including Amritsar, Tarn Tarn, Chabbal, Bhikhiwind, Ajnala, Chogawan, Rayya, Mehta, Qadian, Batala, Gurdaspur, Fatehgarh Churian, Dera Baba Nanak etc.

ELECTRICAL POWER CONSUMPTION

ROOFTOP SOLAR POWER PLANT:

In a step towards Environmental Consciousness, Global Group of Institutes became first in the region among self financed Technical Institutes to install a Solar Plant. We have installed 213 Kilowatts Roof Top Solar Power plant. It is expected to generate over 3, 00,000 units per year. This will be catering to nearly 60% of the institutes total power consumption. The installed solar power plant will reduce the carbon footprints emissions by 289845 Kgs annually. This initiative is not only a step towards reduced dependence on oil and fossil fuels rather a strong gesture in maintaining and protecting the green environment.

a. %age of annual power requirement of the Institute met by the renewable energy sources:

Response: 90%

b. Annual power requirement met by the renewable energy sources (in kWh)

Response: 254786

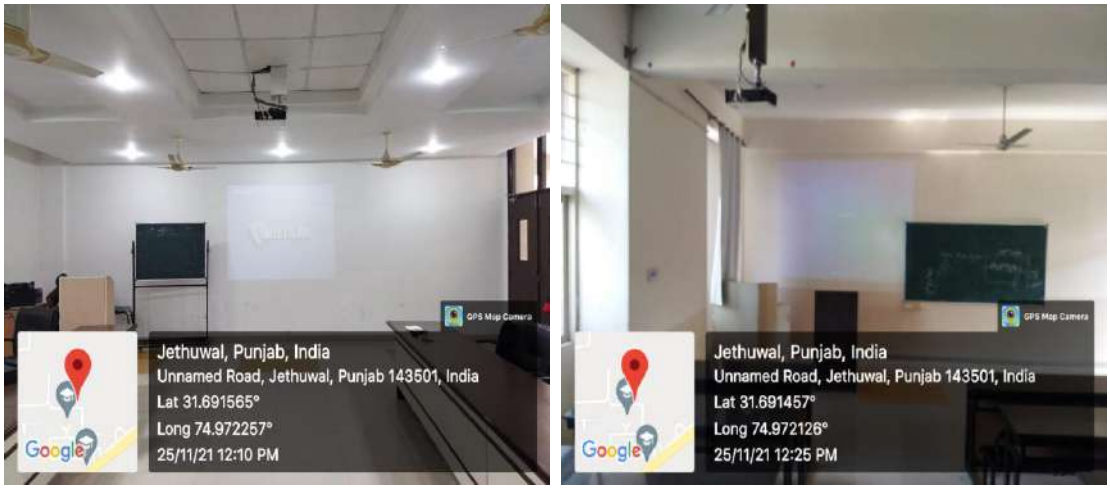
c. Total annual power requirement (in kWh)

Response: 283265

ENERGY SAVING INITIATIVES WITH INFRASTRUCTURAL DEVELOPMENTS

Energy Conservation

Most of the existing tube lights have been replaced by energy efficient LEDs at various locations, viz., Admission Cell, Corridors, Multimedia Centre, Auditorium, Class-rooms, Labs, Academic Branch, Training and Placement Cell and Hostels etc. in the institute.



ENERGY SAVING LEDSs

24- Hour POWER BACK UP

The institutes have 380 KVA, 82 KVA and 32 KVA different capacity generators to cater uninterrupted power supply that is available for 24 hours to bear the load of all classrooms, labs, offices, hostels and residential accommodations.

EXPENDITURE ON GREEN INITIATIVES DURING LAST FIVE YEARS

Financial Year	Tree Palntation & Gardening Lawn Work	Sewerage Treatment Plant	Purchase of LEDs	Solar PV	Total (In Rupees)
2020-21	492602	-	413000	-	905602
2019-20	419279	-	10600	7538602	7968481
2018-19	22751	17700	-	-	40451
2017-18	153320	-		-	153320
2016-17	59120	-		106050	165170

ENERGY AUDIT REPORT

for

GLOBAL GROUP OF INSTITUTIONS

AMRITSAR

PREFACE

Data collection for energy audit of the Global Group of Institutions was carried out by the team during November-December,2021. This audit was conducted to seek opportunities to improve the energy efficiency of the campus. Reduction of energy consumption while maintaining or improving human comfort, health and safety were of primary concern. Beyond simply identifying the energy consumption pattern, this audit sought to identify the most energy efficient appliances. Moreover, some daily practices relating common appliances have been provided which may help reducing the energy consumption.

The report accounts for the energy consumption patterns of the academic area, central facilities and hostels based on actual survey and detailed analysis during the audit. The work encompasses the area wise consumption traced using suitable equipments. The analysis was carried out with software MS-Excel. The report compiles a list of possible actions to conserve and efficiently access the available scarce resources and their saving potential was also identified. We look forward towards optimization that the authorities, students and staff would follow the recommendations in the best possible way.

The report is based on certain generalizations and approximations wherever necessary. The views expressed may not reflect the general opinion. They merely represent the opinion of the team guided by the interviews of consumers.

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1. INTRODUCTION

Global Group of Institutes were founded by Dr B S Chandi and Dr Akashdeep Singh Chandi, who had the vision for creating a truly world class institutes which would cater to the needs of Indian and Overseas Industry, Research and Educational Institutions. Global Group of Institutes have tremendously grown since their inception in 2008 and are well known for imparting the Quality Education in the region.

Global Group of Institutes have always been led from the front by prominent academicians as Directors, and it is evident from the fact that previous Directors contributed for long periods at bench mark Institutes of the Country including ISRO, IIT, NIT etc. The institutes offer Undergraduate and Post Graduate Programmes and Doctoral Programmes in the field of Engineering, Management, Pharmacy and Computer Applications. These institutes are approved by All India Council for Technical Education, Pharmacy Council of India and affiliated with IKG-Punjab Technical University Jalandhar/ PSBTE & IT Chandigarh.

We have undergone accreditation of highest level like NAAC which ensures the balance between high academic quality and professional relevance and the needs of the corporate world are well integrated into programmes, activities and processes.

Following Institutes have been merged and renamed as Global Group of Institutes as per AICTE 2019-2020

1.Global Institute of Management & Emerging Technologies (Estd 2008, For B.Tech, M.Tech, MBA & MCA)

2.Global Institute of Management (Estd 2008, for MBA, BBA, BCA, B.Com(Hons), Airlines Tourism, Hotel Management, Agriculture, MLS)

3.Global Polytechnic College (Estd 2013, for ME, CE, EE, CSE)

4.Global Institute of Pharmacy (Estd 2018 for Pharmacy)

1.1 OBJECTIVE OF ENERGY AUDIT EXERCISE

The objective of Energy Audit is to promote the idea of Energy Conservation in the Campus of Global Group of Institutions Campus, Amritsar. The purpose of the energy audit is to identify,

quantify, describe and prioritize cost saving measures relating to energy use in the Hostels, Departments and Institute Central Facilities.

The work eligible for Energy Audit Study should be directed towards:

- Identification of areas of energy wastage and estimation of energy saving potential in Hostels, Departments and Institute Central Facilities.
- Suggesting cost-effective measures to improve the efficiency of energy use.
- Estimation of implementation costs and payback periods for each recommended action.
- Documenting results & vital information generated through these activities.
- Identification of possible usages of co-generation, renewable sources of energy (say Solar Energy) and recommendations for implementation, wherever possible, with cost benefit analysis.

1.2 ANALYSIS OF AREA OF USE

Identifying where energy is used is useful because it identifies which areas the audit should focus on and raises awareness of energy use and cost. The results of the analysis can be used in the review of management structures and procedures for controlling energy use.

Analysis of energy use can be done by installing sub meters in different plant locations to pinpoint actual energy usage per area. This is a good source data for allocating energy use. The plant manager can also list all equipment used and the corresponding operating hours. With this information, spreadsheet can be created and charts useful for analysis may be generated.

Important Points to Consider When Collecting Load Data:

a. **Usage** – The usage of the equipments in terms of hours per day and days per year can be collected from key persons in Hostels, departments etc. It is important to ensure the accuracy of this data because much of the potential for energy savings lies on wise allocation of the equipment's operating hours.
b. **Actual power consumed** – Actual power consumption is measured by Wattmeter.
c. **Supplementary Information** – Some other supplementary information are also collected such as state of insulation in case of ACs or availability of natural light etc.

1.3 IDENTIFICATION OF TARGET AREAS

Opportunities for energy savings can range from the simplest, such as lighting retrofits, to the most complex such as the installation of a cogeneration plant. After the preliminary identification of opportunities, more time should be spent on those which have shorter payback periods.

1.4 COST BENEFIT ANALYSIS

The identified energy conservation opportunities should be analyzed in terms of the costs of implementing the project versus the benefits that can be gained. Say for example, if we wish to install a heat plate exchanger to recover waste heat, we must calculate the total cost of installation and compare that with the savings derived from recovering waste heat.

1.5 ACTION PLAN TO SET IMPLEMENTATION PRIORITY

After passing the cost benefit test, an action plan should be developed to ensure that the opportunities identified are implemented. The action plan should include all the major steps for implementing the opportunity as well as the people responsible. Furthermore, there should be a plan for monitoring the results.

2. ENERGY AUDIT METHODOLOGY

The methodology adopted for this audit was a three step process comprising of:

1. **Data Collection** – In preliminary data collection phase, exhaustive data collection was performed using different tools such as observation, interviewing key persons, and measurements.

2. **Data Analysis** - Detailed analysis of data collected was done using MS-Excel. The database generated by MS-Excel was used for producing graphical representations.

3. **Recommendation** – On the basis of results of data analysis and observations, some steps for reducing power consumption without affecting the comfort and satisfaction were recommended along with their cost analysis.

2.1 DATA COLLECTION

For suggesting any corrective measures to reduce power consumption, it is first necessary to know the power consumption pattern in detail. For this, the exhaustive data collection exercise was performed at all the departments, academic centers, hostels, and other supporting entities such as library, computer centre etc.

Following steps were taken for data collection:

- The team went to each department, centre, hostels etc.
- Information about the general electrical appliances was collected by observation and interviewing.
- The power consumption of appliances, rated power was used (CFL for example).
- The details of usage of the appliances were collected by interviewing key persons e.g. Warden (in case of hostels), caretaker (in case of departments) etc.
- Light intensity was measured using lux meters at the places where light intensity was either very low or very high.

- In case of Air Conditioning, insulation was checked by visual inspection.

Approximations and generalizations were done at places with lack of information.

2.2 DATA ANALYSIS

In data analysis, the data collected is processed to draw significant conclusions to pinpoint loopholes and identify the areas to focus upon. Analysis of the power consumption observations obtained was used to obtain the power consumption pattern and also to get the information about the points where electric power is wasted.

2.3 RECOMMENDATION

Energy as well as cost analysis of different appliances were performed and recommendations were made based on the capital cost recovery time.

Following were the steps involved in this process:

- The capital cost involved in replacing an appliance and/or process was estimated. The energy saving by the move was calculated in terms of price of energy per year.
- These two costs were compared to calculate the capital cost recovery time which is defined as the total time by which the saving in energy bill balances the capital cost involved.

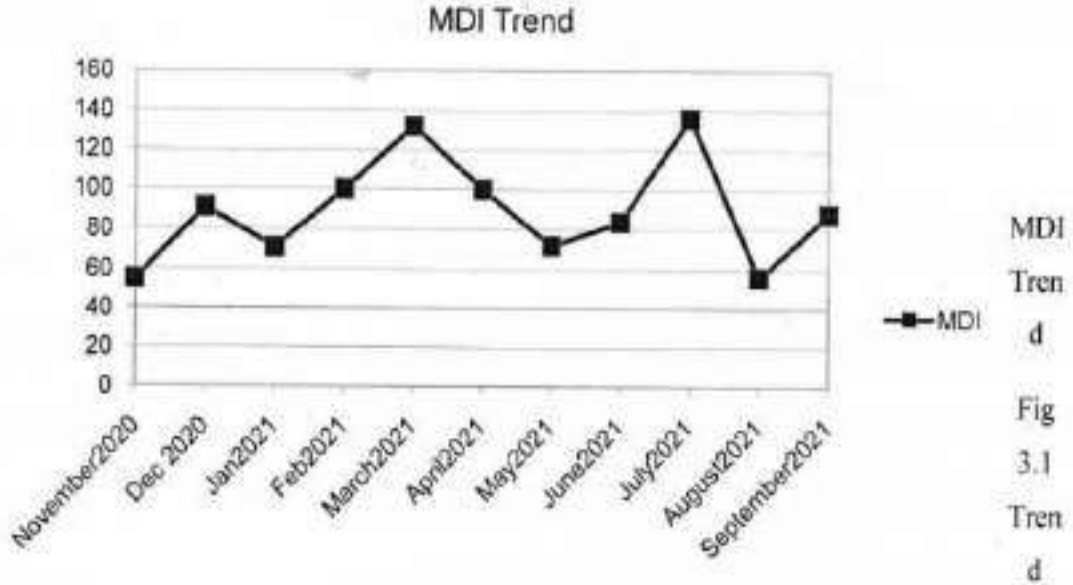
If capital cost recovery time is less than the product life, the move can be supported. Some other recommendations were also made which are based on lighting intensity, AC insulation etc.

3. ANALYSIS OF POWER CONSUMPTION

With the use of MS-Excel, we have analyzed the power consumption by equipment, application as well as location. Here is the summary of the analysis presented in form of charts for better understanding.

3.1 OVERALL CAMPUS

There are 3 hostels, 11 academic departments, 1 academic center, and supporting infrastructures like central library, computer center, and administrative block (Main Building) in Global Institutions campus. The campus has a connected load of 495kVA and Contract demand of 550kVA. The consumption detail for last 12 months are shown graphically below. The first figure shows the variation of Maximum demand over the last year.



MDI Trend

Fig 3.1 Trend line for MDI variation

The following figure shows the trend line for kWh consumption.

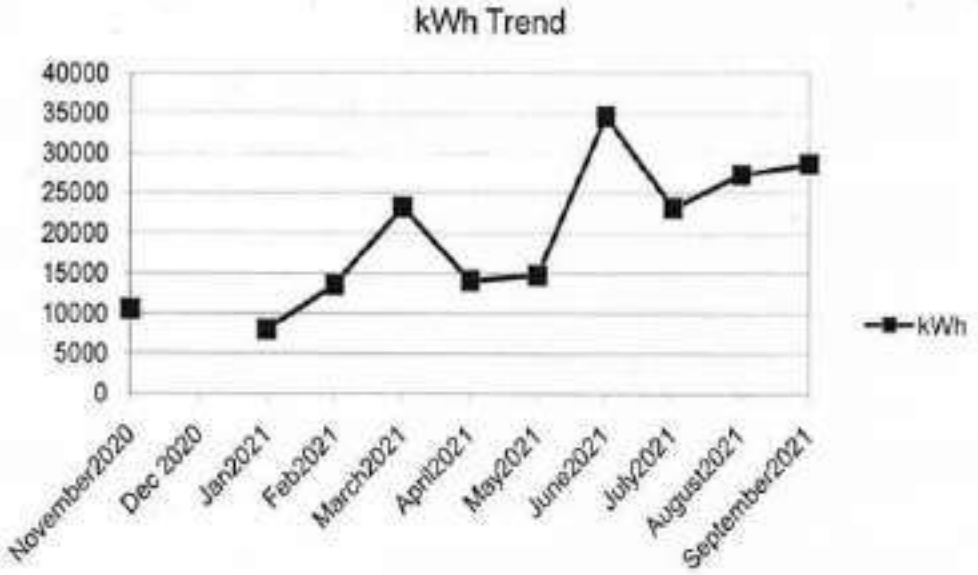


Fig 3.2 Trend line for kWh consumption

The following figure shows trend line for kVAh consumption

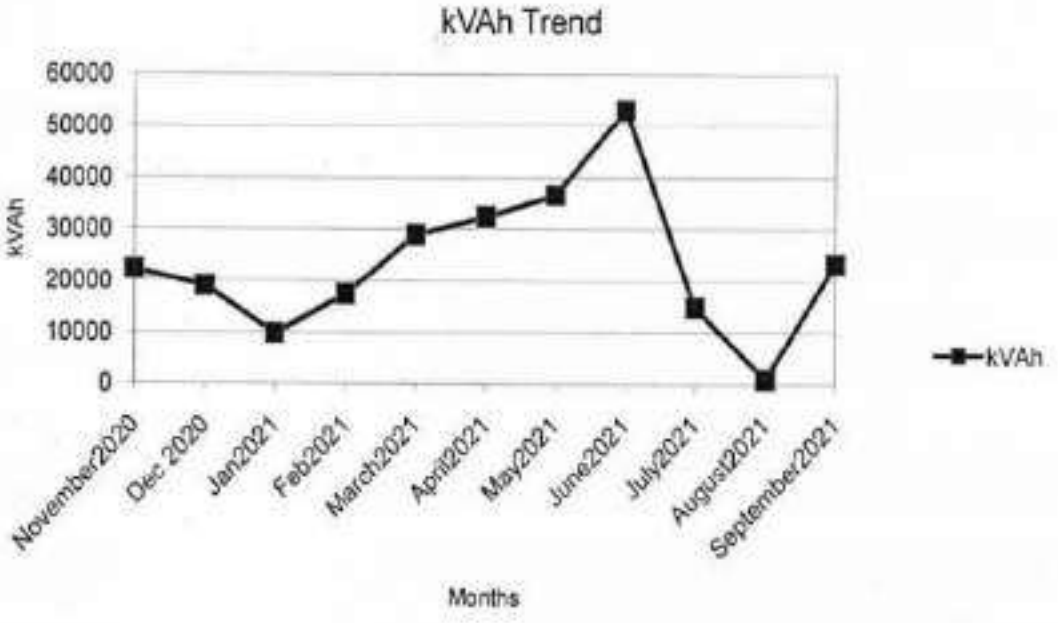


Fig 3.3 Trend line for kVAh consumption

The area wise consumption for one month is as given by the bar chart below:

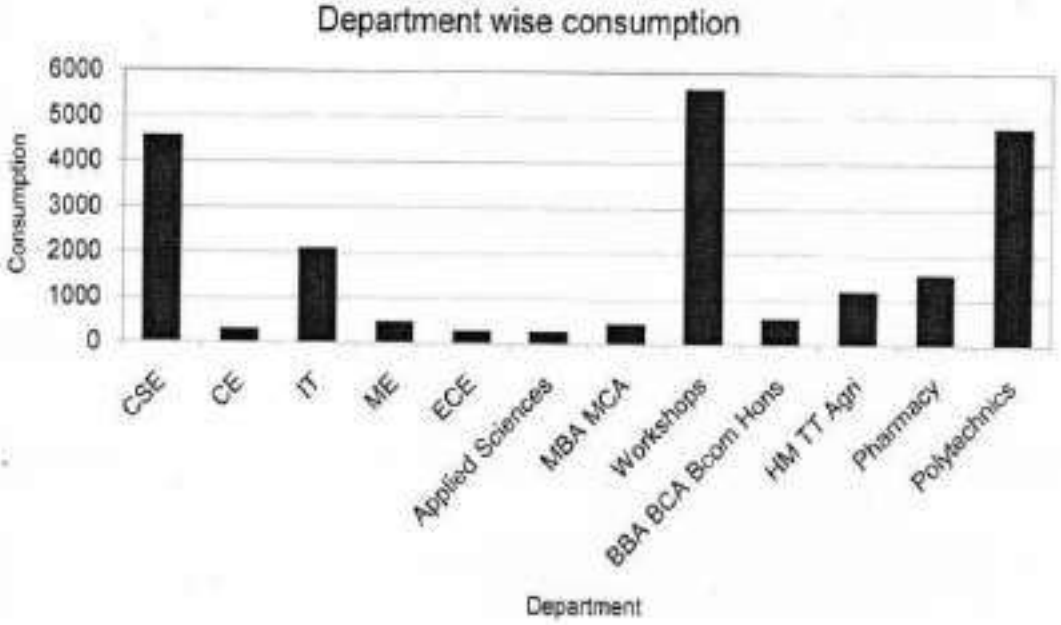


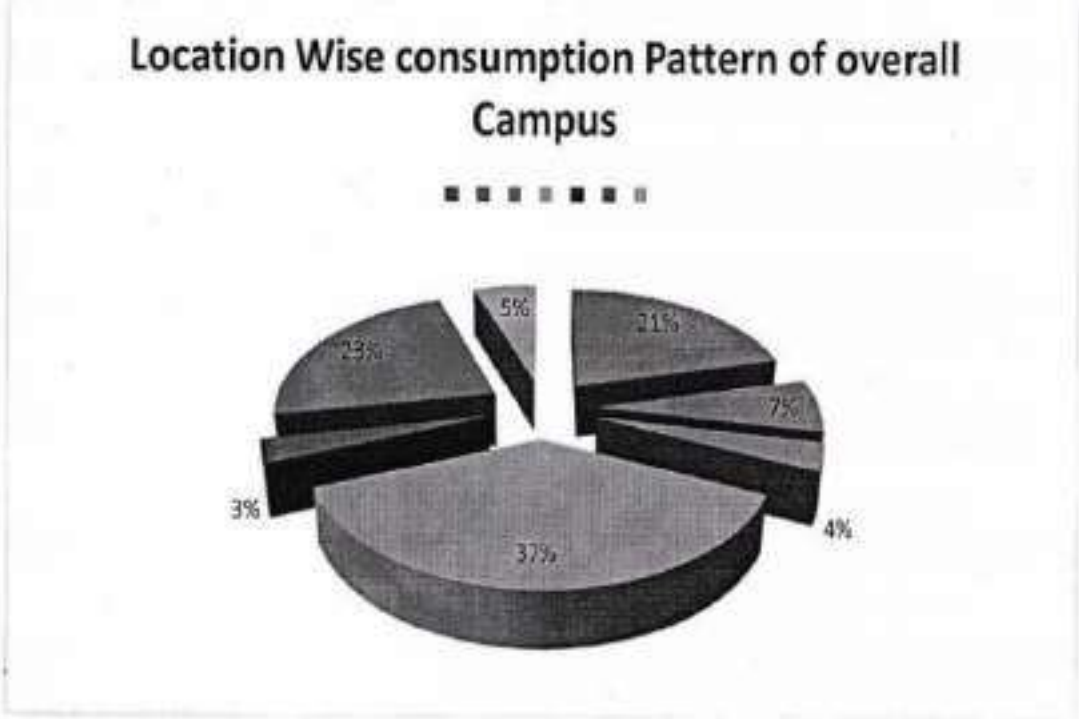
Fig 3.4 Department wise consumption

From the above it is seen that workshops are using the highest amount of power followed by Computer Science department (CSE).

A point to note in the above chart is the higher consumption of CSE and IT as compared to other departments which in itself explains how ACs and Computers affect the consumption distribution. Small consumption of other departments is due to their small size. Classrooms have higher consumption because of having higher lighting and fan load. In the workshop, Machine Shop and Welding Shop are the maximum power consuming workshops due to Arc Welding sets and other machines.

3.1.1 LOCATION WISE ANALYSIS OF CAMPUS:

The location wise distribution of power consumption in the campus has been shown in the following chart



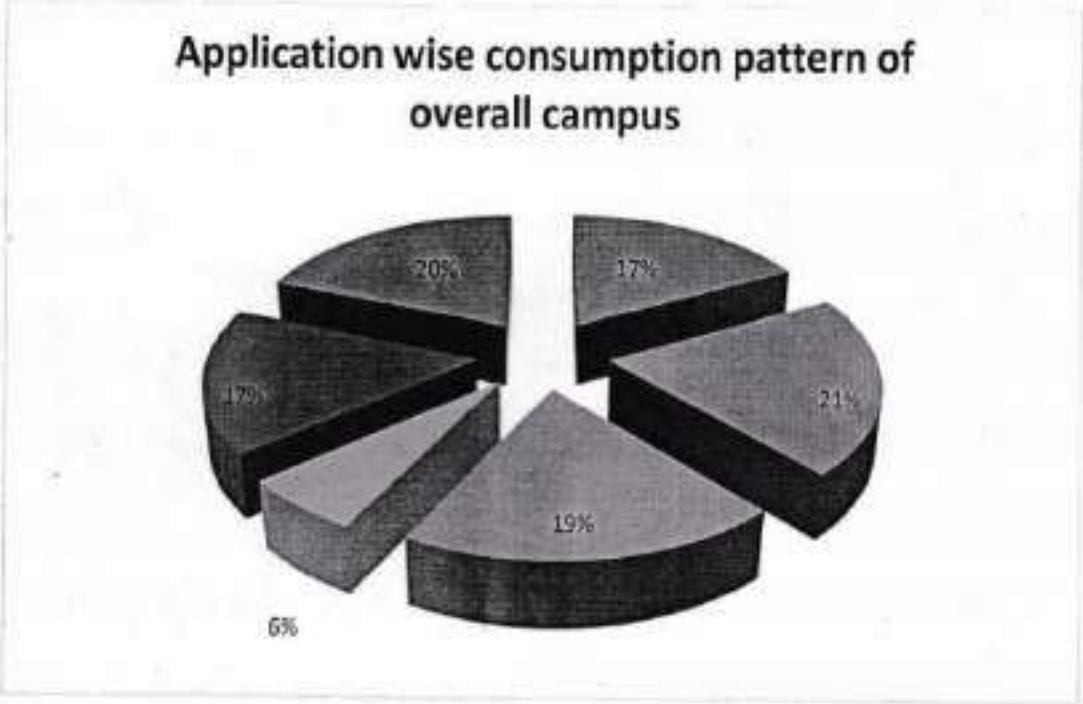
As the chart suggests, major power consuming areas are central facilities (23%) and rooms in hostels (37%). After that there are laboratories (21%), classrooms (7%), toilets (5%), other offices (4%), mess (3%).

Laboratories with 21% share in power consumption are very important area to focus for improving energy efficiency of the campus. In case of computer labs, wise use of computers and ACs is required to reduce the consumption. In other labs also, wise use of lighting and other appliances can largely reduce the consumption.

Rooms in hostels are major contributor to energy inefficiency due to poor practices. Also, for new hostels to come, it is advised that LED tube lights should be used for lighting and star rated/BLDC fans should be used. Corridors and toilets are the areas where automation can be used to reduce the consumption largely.

3.1.2 APPLICATION WISE ANALYSIS OF CAMPUS:

Application wise analysis of overall campus has been carried out to find out the application areas with relatively higher power consumption. The results of the application wise analysis of power consumption in Global Institutions campus have been summarized in the following chart



It's quite clear from the chart that maximum power is wasted in comfort applications (16%) such as room coolers, air conditioners, room heaters etc. To reduce the consumption in these applications, awareness about the energy conservation is very important and effective step.

Lighting with 21% of total power consumption is an application where energy efficiency can be achieved very easily by replacing old appliances by new efficient ones.

Office applications include computers, printers, scanners, Xerox machines etc. and contribute as high as 17% of total consumption. Replacing CRT monitors by LCD monitors can drastically reduce consumption of this application area.

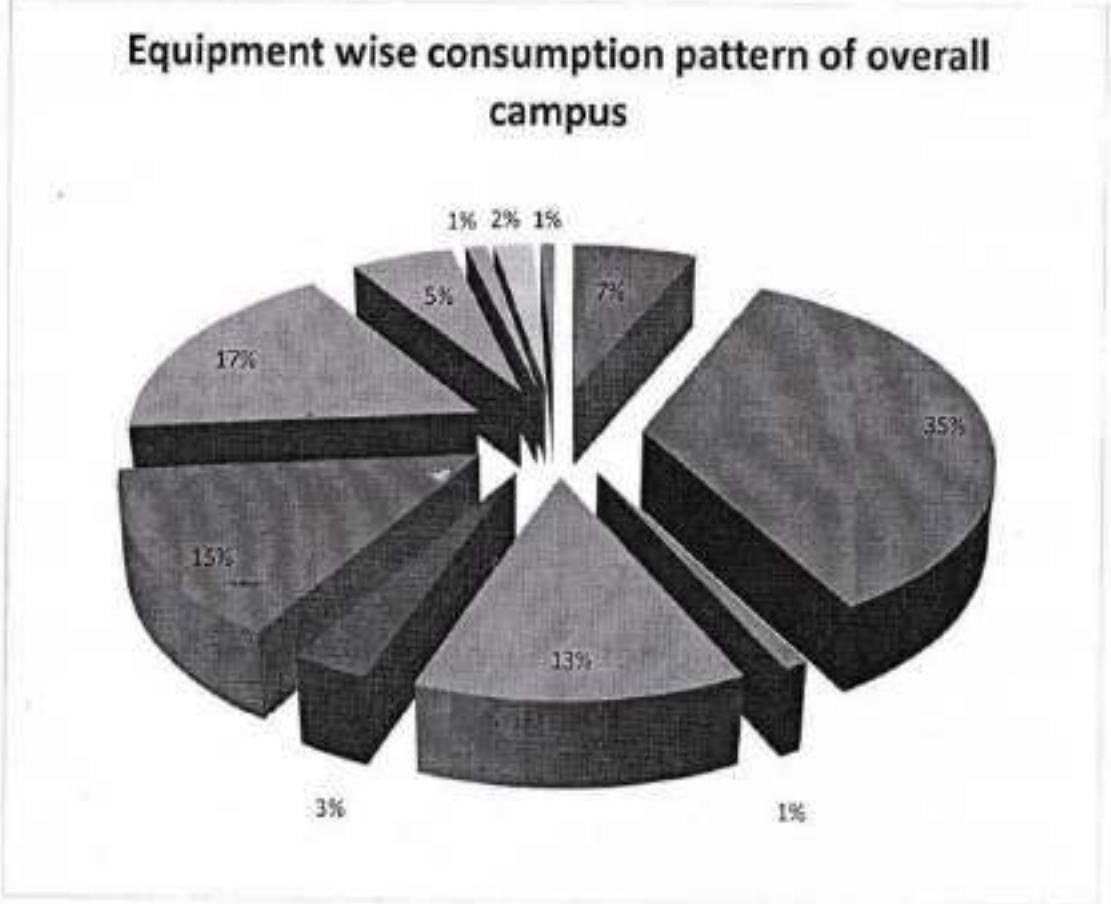
Air circulation appliances (fans) having share of 17%, are also among major culprits in energy inefficiency.

Washing/bathing/cleaning include geysers, water coolers, water purifiers etc. accounting for 6% of total consumption.

Others include various load on power plugs which has a share of 20% of load.

3.1.3 EQUIPMENT WISE ANALYSIS OF CAMPUS:

Equipment wise analysis has been performed in order to identify the equipments, within same application area, which consume more power as compared to others. During equipment wise analysis of the overall campus, the equipments with power consumption less than 1% of total power consumption of the campus were ignored so as to make the analysis results simple and easy to observe. Following chart summarizes the results of equipment wise analysis of power consumption



AC consumes 17% of total power. For lighting, dominant appliance is the conventional Ballast[Choke] tube light with 13% share and relatively efficient electronic Ballast[Choke] tube lights and T5 lamps have negligible share. CFL has 3% share in total power consumption.

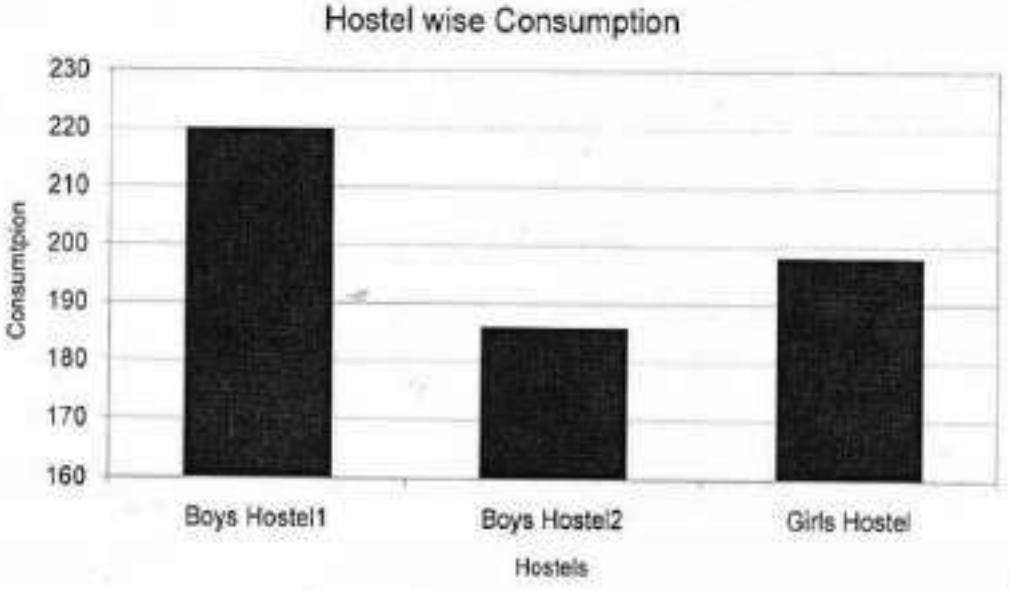
Computers also have a contribution of 15% to total power consumption.

Resistance regulated fans have 42% share (35% new fans and 7% old fans) and electronic regulated fans and efficient wall fans have negligible share in total power consumption.

Geysers with 5% share in total consumption are another significant contributor. Water coolers (2%) and refrigerators (1%) and washing machine(1%) are other significant appliances.

3.2 HOSTELS

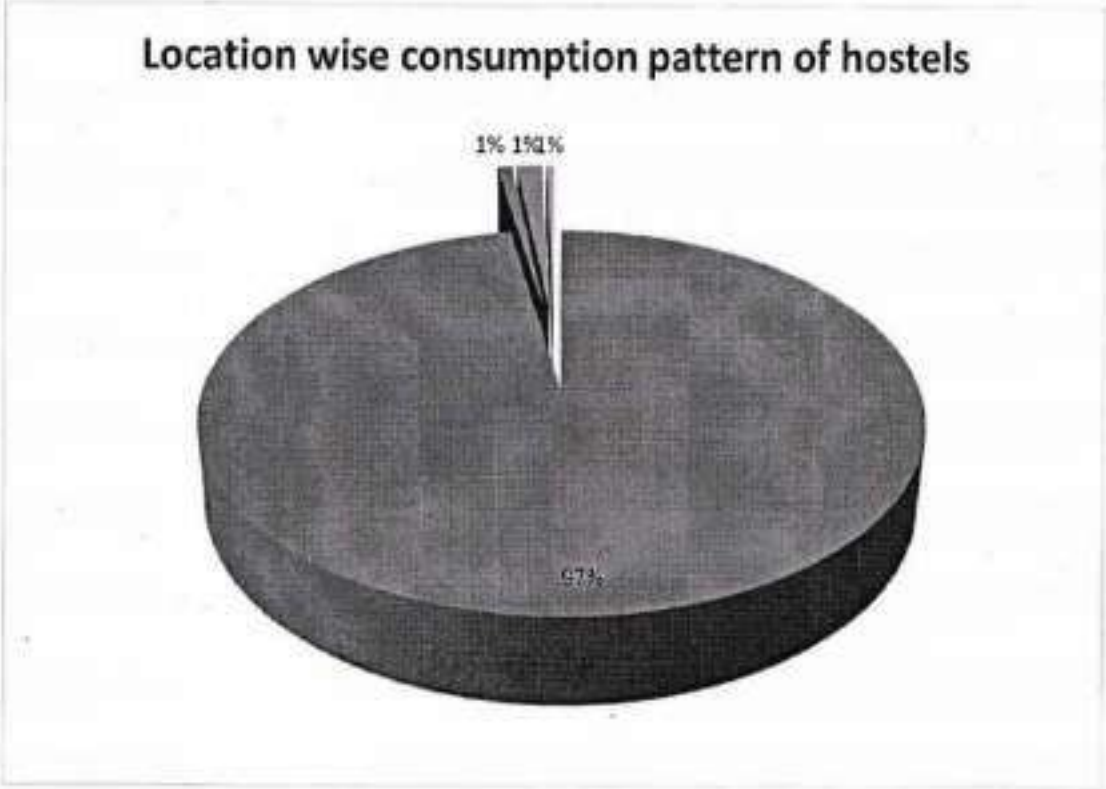
There are in all 3 hostels in Global Institutions, Amritsar. Out of these, 2 are for boys and 1 for girls. All hostels have capacities ranging from 100 to 200 seats. Most of the rooms are single seated, but some hostels have four seated rooms as well. In single seated rooms, one tube light and one ceiling fan has been provided while in four seated rooms, two tube lights and two ceiling fans are provided. In addition, each hostel has a mess.



Our analysis suggests that boys Hostel no. 2 has relatively less consumption as compared to other hostels. This may be due to average occupancy, occupancy during vacations, architecture or practices.

3.2.1 LOCATION WISE ANALYSIS OF BUILDINGS:

The location wise analysis of all buildings done together suggests that maximum power consumption after rooms is in toilets. The reason is mostly poor practices. It is a general complaint of all supervisors that students DO NOT switch off the geyser after use. High consumption of mess is not a surprise as they use a number of other appliances in addition to general appliances in their kitchen.



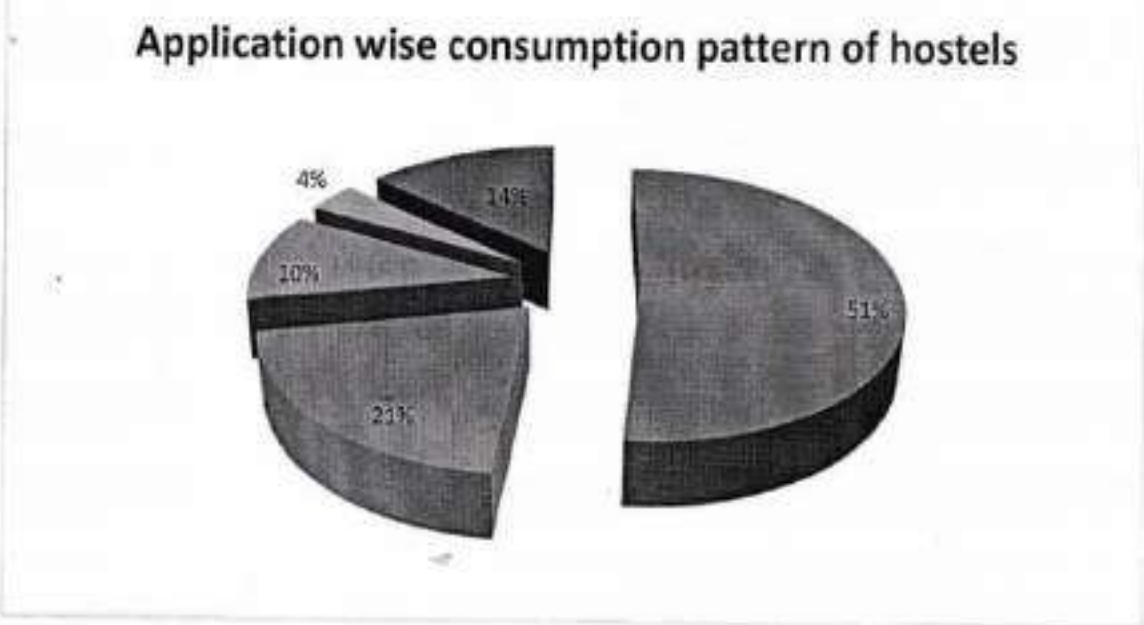
The rooms, consuming 97% of total consumption, have major role in reducing total energy consumption, just by using better practices. Some students don't switch off the lights and/or fans even when they are not in room. Most students keep their computer/laptop in standby mode all the time. Lots of power is wasted due to these poor practices.

Toilets are also a major area to focus upon, from energy conservation point of view. Power consumption here can largely be reduced by simply using geyser a little more wisely. In lighting of toilets also, there is large potential of saving by using automation so that the light is not switched on all the time.

Mess, though having smaller share in power consumption than above two, have large potential for saving electric energy. Motion sensors can be utilized to automatically switch off the lights when there is no motion in the corridors. Messes are more or less using electricity wisely and have very low potential for reducing energy consumption (except in the case, LPG replaces electricity completely for cooking purpose.)

3.2.2 APPLICATION WISE ANALYSIS OF HOSTELS

Application wise analysis helps to pinpoint the application areas to attain maximum savings with minimum efforts. Application wise analysis of hostels indicates that air circulation consumes more than 50% of the total power.

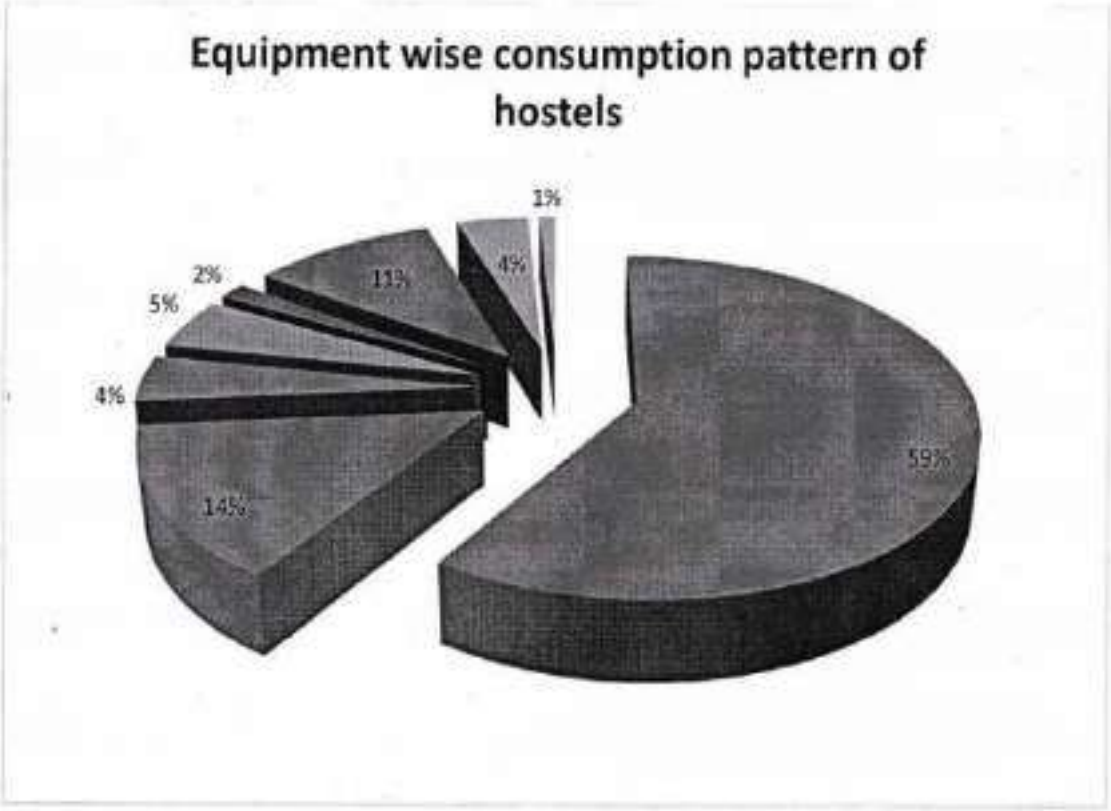


Washing/Bathing/Cleaning comprises of geysers, washing machines etc. Here energy efficiency mostly requires good practices.

Then are the air circulation comprising of fans, ACs and coolers etc. In this category, replacing old appliances by new ones can be very helpful to energy efficiency. For example, resistance regulators of fans may be replaced by efficient electronic regulators. Next is lighting which consists of tube lights, CFLs, Incandescent light bulbs, halogen lamps etc. Here also, energy efficient appliances can be used to reduce energy consumption.. Others (power plug load) are having significant consumption share and offer very small space for reducing consumption.

3.2.3 EQUIPMENT WISE ANALYSIS OF HOSTELS:

Considering the viability of representation, the appliances having power consumption less than 1% have been ignored while doing equipment wise analysis of Hostels.



Fans and Tube lights are maximum power consuming appliances accounting for 59% and 14% of total consumption. Geysers account for 11% of total consumption. Consumption in water coolers is 4% of the total power consumption. All other devices have not that much significant consumption.

3.3 DEPARTMENTS

Global Institutions has 11 academic departments. Each department has laboratories, classrooms, faculty rooms, and central facilities.

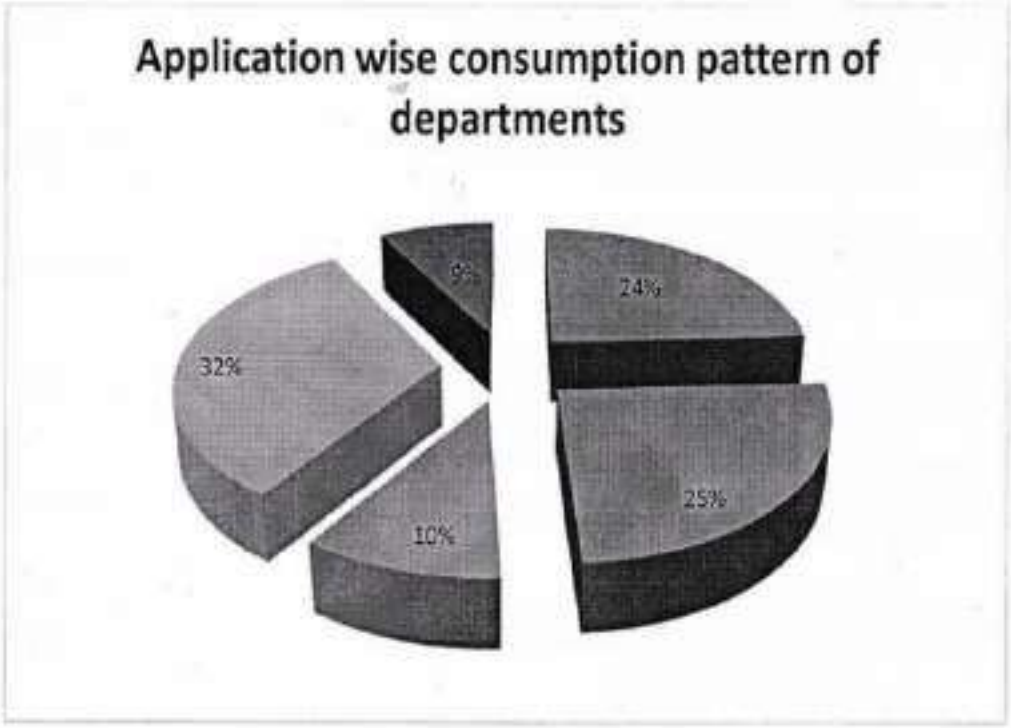
Following bar graph gives the total power consumption estimates of different departments:

So, laboratories consume 66% of total power consumed in the departments. This is partly because laboratories are large in number and partly because all the appliances are on for the entire duration a laboratory is open. Many of the labs are air conditioned.

Faculty offices come second with 11% of total power consumption in departments. It is important to note here that since the audit has been conducted in the months of February and March. Classrooms consume 22%, corridors 1%.

3.3.2 APPLICATION WISE ANALYSIS OF DEPARTMENTS

Results of application wise analysis hint at excessive use of ACs, room coolers, room heaters etc in departments. Also the office appliances (which include computers, printers, scanners etc.) contribute largely to the total power consumption in the departments. The distribution of power consumption by different application would be clearer from the distribution pie chart given below



Comfort applications are consuming large power (25%). This clearly indicates that the ACs and heaters are not used wisely.

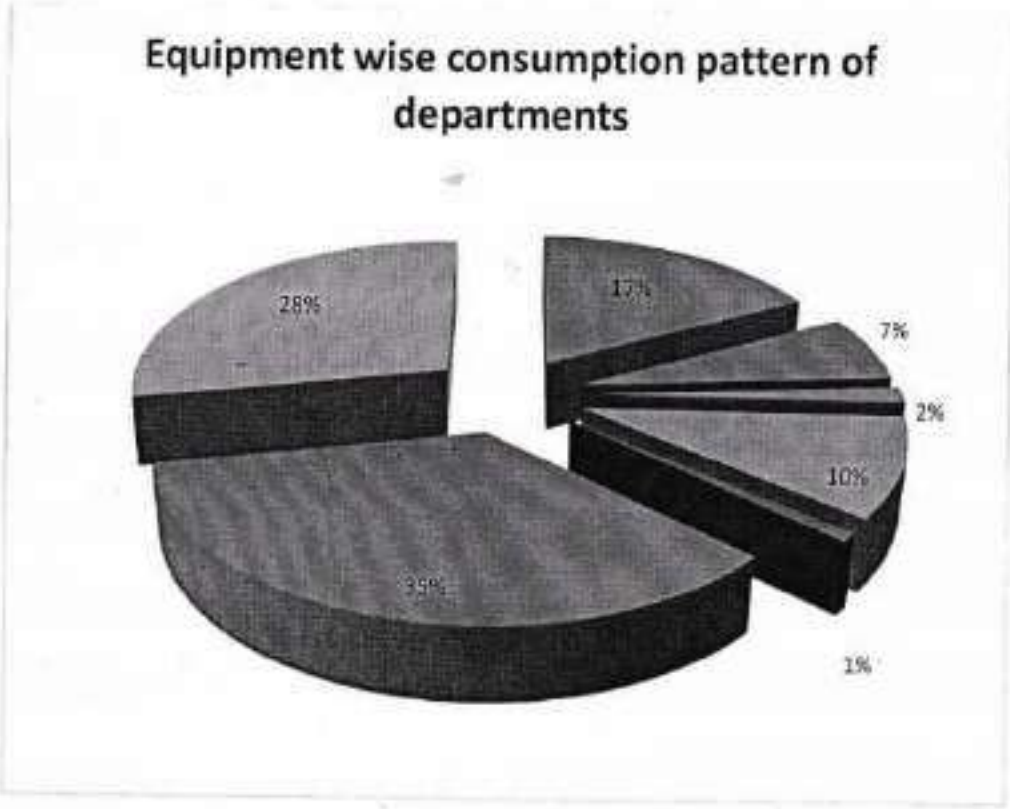
Office applications (32%) come second and its contribution is not a surprise due to large number of computers in departments.

Air Circulation (24%) is third in the list. It can be brought down further by using modern efficient appliances and automation.

Lighting have a share of 10%, and electrical accessories have 9% share in total consumption. Others are insignificant.

3.3.3 Equipment wise Analysis of Departments:

Following chart has been generated from the equipment wise analysis of power consumption in departments (ignoring the equipments having power consumption less than 1% of total power consumption):



AC is the second maximum power consuming appliance making up to 28% of total power consumption of the departments.

Computers account for maximum consumption of 35% of total power consumption in departments. 7% in computers with CRT monitor.

Conventional Ballast[Choke] tube lights have 10% share in total power consumption in departments, CFLs have 1%, electronic Ballast[Choke] tube lights have negligible share in total power consumed in departments.

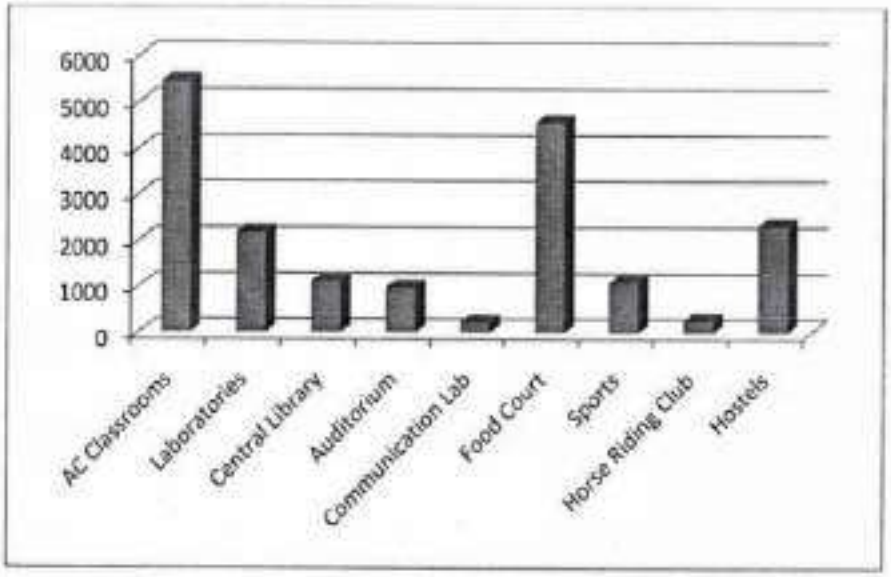
26% of total consumption is in fans (17% in old fans and 7% in new fans).

3.4 INSTITUTE CENTRAL FACILITIES

The energy audit of following units has been conducted and analyzed under Institute Central Facilities:

1. AC Classrooms
2. Laboratories
3. Central Library
4. Auditorium
5. Communication Lab
6. Food Court
7. Sports
8. Horse Riding Club
9. Hostels

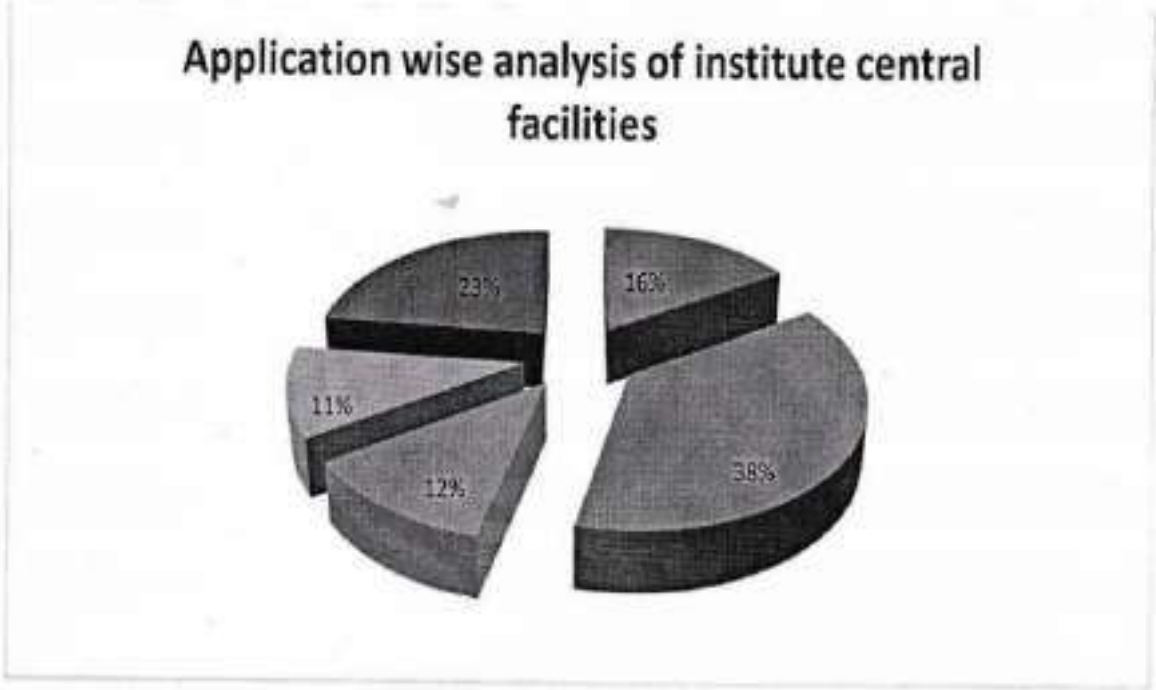
Following bar chart gives an estimation of total power consumption in different Institute central facilities



As the bar chart suggests, AC Classrooms are the largest power consuming unit among the institute central facilities. This is followed by food court and hostels in that order.

3.4.1 APPLICATION WISE ANALYSIS OF INSTITUTE CENTRAL FACILITIES:

Application wise analysis of power consumption in Institute Central Facilities indicates the domination of comfort (AC, room cooler, room heater etc.) and office (computer, printer, scanner, xerox machine etc.) appliances in these units and others include Refrigerator,water cooler, coffee machine and power plug load. Following chart gives the distribution of power consumption among different application areas in Institute Central facilities:



Comfort has a maximum of 38% share in total power consumption. Most of the places in the Institute Central Facilities are air conditioned and also their usages are relatively higher. For example, Central Library remains open for larger part of day and the study room also remains open for 12 hours.

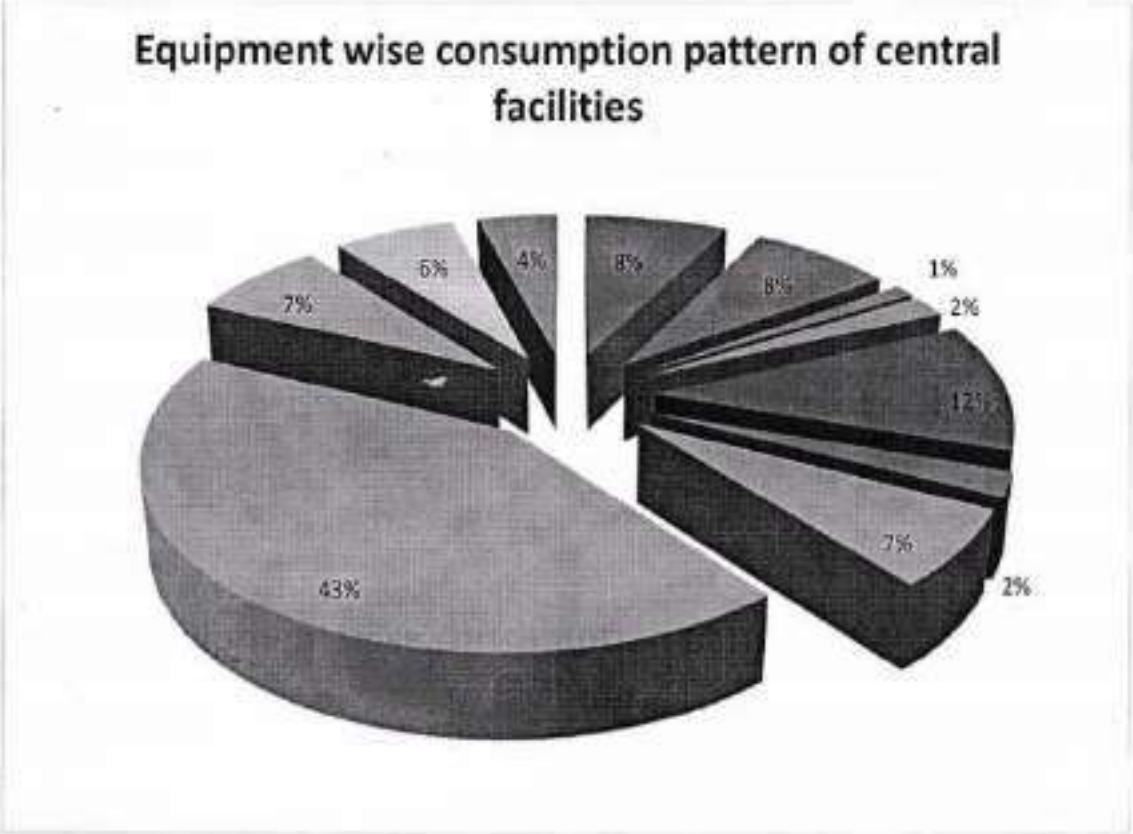
Office appliances have a share of 11% and dominant in this is the consumption of computers. During the data collection, most of the computers in Library, Computer Center as well as in offices were found to be in standby mode.

Lighting accounts for 12% of the total power consumption in Institute Central Facilities. Here dominant lighting appliance shifts from conventional tube lights to CFLs. Except in the administrative block, most of the places in Institute Central Facilities use CFLs for lighting.

The per cent consumption of air circulation appliances is as low as 16% due to use of old fans. Other major loads share 23% of the total power.

3.4.2 EQUIPMENT WISE ANALYSIS OF INSTITUTE CENTRAL FACILITIES:

Equipment wise analysis of power consumption in Institute Central Facilities makes the picture clearer. Following chart summarizes the results



It is important to state here that this equipment wise analysis has been carried out by ignoring a large number of appliances having consumption less than 1% to make the analysis work simpler.

ACs are found to be consuming as much as 43% of the total power consumption in Institute Central Facilities.

Computers account for 7% of total power consumption in Institute Central facilities.

CFLs and conventional tube lights have shares of 2% and 12% respectively in the total power consumption of Institute Central facilities.

Fans account only for 19% (8% new and 8% old) power consumption.

3.5 STREETS

Sodium Vapor lamps are dominant lighting source in the streets. Following table summarizes the street lighting details:

CATEGORY	Power (W)	No	hr/day	day/yr	total power(kWh)
Tubelight	40	16	10	365	2336
Sodium Vapour Lamp	250	26	7	365	16607.5
Total					**18943.5**

4. RECOMMENDATIONS FOR BETTER ENERGY EFFICIENCY

Based on the analysis of the power consumption data, certain steps have been recommended for improving energy efficiency of the campus. Complete cost analysis of implementation of recommended measures has been performed wherever necessary. Also, a number of general measures for energy efficiency have been listed. Described below are some important recommendations for better energy efficiency:

4.1 REPLACING CONVENTIONAL BALLAST[CHOKE] FTLS WITH LED FTLS:

Dominant light source at most places in the campus is traditional 40W FTLs with conventional Ballast[Choke] which consumes 14-16W. As per our data collection, the campus has in total 1214 conventional Ballast[Choke] FTLs. If these conventional Ballast[Choke]s are replaced by LED FTLs, 28W power can be saved per FTL.

Total No. of conventional Ballast[Choke] FTLs in Campus = 1214

Average Power of conventional Ballast[Choke] FTL = 56W

Average Power of LED FTL = 28W

Power saved per FTL = (56-28)W =28W

Total Power saving = 1214x28W = 33992W = 33.992kW

Average Use of FTL per year = 270*7h=1890h

Total Energy saved per year = 33.992*1890 kWh = 64244.88kWh

Saving in Rs. Per year = 64244.88*7 = Rs. 449714.16

Average Cost of Replacing each FTL = Rs. 300

Total Cost of Replacing all Conventional Ballast[Choke] FTLs =300x1214= Rs. 364200

Capital Cost Recovery time =364200/449714.16=0.8 yr

Hence, the capital cost recovery time for replacing all conventional Ballast[Choke] FTLs of the campus is around 0.8 years

4.2 REPLACING OLD FANS WITH NEW FANS

Most of the buildings in college campus are very old fans. . According to the data collected, there are a total of 1130 old fans. A saving of 42 W per fan can be obtained by replacing the old fans with new ones.

Cost Analysis of Replacing old fans with new fans

Total no. of old fans in campus= 1130

Average power of old fan= 70W

Average power of new fan= 28W

Power saved per fan= 42W

Total Power saving= 1130x42= 47.46kW

Average use of fans per year= 200*8= 1600hrs

Total Energy saved per year =47.46*1600= 75936kWh

Saving in Rs. Per year = Rs 531552

Average Cost of Replacing per fan = Rs 2800

Total Cost of Replacing all fans = Rs 3164000

Capital Cost Recovery time = 5.95yrs

Hence, the capital cost recovery time for replacing all old fans is approx 5.95 years.

4.4 REPLACING GEYSERS BY SOLAR WATER HEATING SYSTEM:

Geyser is the device with one of the highest consumption in hostels. It is the appliance where maximum power is wasted. Heating water by electricity is the most inefficient way to heat water. Alternatively, heating water for bathing can be accomplished by solar water heating system.

Cost Analysis of Replacing Geysers by SWHS

Cost of a domestic SWHS = Rs. 17000

Capacity of the SWHS = 100LPD

Average Capacity of Geyser = 50L

No of geysers one SWHS can be used to replace = 2

Average power of Geysers = 2kW

Average use per year = 5*180h = 900h

Energy saved per year by replacing Geysers by SWHS = 2*2*900kWh = 3600kWh

Saving in Rs. Per year = 3600*7= Rs. 25200

Capital Cost Recovery time = (17000)/(25200) = 0.67 yr

Hence, the capital cost recovery time for replacing geysers by SWHS is 0.67 years. So, the step of replacing geysers by SWHS will not only help in increasing energy efficiency, but also will reduce the cost of bathing water.

4.5 USE OF MOTION SENSORS IN CORRIDORS AND TOILETS:

Corridors and toilets have large potential of saving energy by use of automation tools. Motion sensors can be used there to automatically switch on the light when there is any movement and switch off the light when there is no movement. This can greatly reduce the total load in corridors and toilets.

Cost analysis of Installing Motion Sensors in a Typical Corridor:

Average number of tube lights in a corridor = 4

Average power of the tube lights = 60W

Average number of motion sensors required = 3

Average reduction in usage per day by motion sensor = 4h

Total energy saved in corridor per year = (4*60*4*365)/1000 =350.4 kWh
Saving in Rs. Per year = 350.4*7 = Rs. 2452.8

Cost of installation per motion sensor = Rs. 250

Total cost of installing motion sensors in a corridor = 3*250 = Rs. 750 Capital

Cost Recovery Time = (750/2452.8) = 0.3 yr

Hence, the capital cost recovery time for installing motion sensors in corridors is 0.3 years. Toilets are also having comparable capital cost recovery time. Hence, this is a highly recommended step to largely reduce the consumption in corridors and toilets.

4.7 BETTER PRACTICES FOR AC:

The institute has in total 124 ACs which make a very large part of total energy consumption of the campus. But, at many places it was found that AC is not used with best recommended practices. Even simple things, such as insulation, are not taken care of. Window panes were found broken at many places. Also, at certain places ACs were found to be used without keeping curtains. These poor practices account for increase in AC load and thus consumption.

Summarized below are some guidelines for most efficient use of ACs:

Proper Insulation – Good quality insulation must be maintained in the air conditionedrooms by keeping all doors and windows closed properly so as to prevent cool air go out and hot air come in.

Curtains – Always keep curtains on windows to prevent direct sunlight inside the roomto avoid heating of cooled air. This reduces AC load significantly.

Maintenance – Proper maintenance and cleaning of ACs is required at regular intervalsto make it work at highest efficiency. Any dirt in filter may reduce efficiency of ACs very significantly.

Operating – The ACs should be switched on 15 minutes before actual use and should beswitched off before leaving the room.

4.8 USE OF MASTER SWITCH OUTSIDE EACH ROOM:

Installation of a master switch outside a room can make it easy for a person to switch off all the appliances of a room in case someone forgets to switch off while leaving the room. This can help improving energy efficiency

Appliance	Number	Annual Savings (kWHr)	Annual Savings (Rs.)	Capital Investment (Rs.)	Payback Period (yrs)
Ballast[Choke]	1214	64244.88	449714.16	364200	0.8
Fan	1130	75936	531552	3164000	5.95
Geysers	2	3600	9720	25200	0.67
Motion Sensors	3	292	788.4	2452.8	0.30

5. EQUIPMENTS AND SOFTWARE USED

We would like to list here the equipments and software used in the project to make the measurements and analyze the data.

5.1 DIGITAL LUXMETER

Digital Luxmeters are the devices used to measure luminosity level. Luminosity measurements were performed at critical points.

5.2 ENEGY ANALYZER

Enercon make energy analyzer was used. This helps to capture the waveforms, current and voltage variations.

5.3 MS-Excel

Datasheets were made in MS excel. . Thereafter equipment wise analysis, application wise analysis and location wise analysis was performed. This data was then exported into excel file for graphical representation.

The above audit report has been prepared under my supervision and based on data gathered and provided by Global Group of Institutions

Dr. Arvind Dhingra

BEE certified energy auditor

EA-5531


sudhir
GPS Map Camera
Sohian Khurd, Punjab, India
MXRC+WHQ, Sohian Khurd, Punjab 143501, India
Lat 31.69111°
Long 74.97111°
24/12/21 03:25 PM
Google


GPS Map Camera
Jethuwal, Punjab, India
MXRC+8Q7, Jethuwal, Punjab 143501, India
Lat 31.690866°
Long 74.971867°
24/12/21 03:03 PM
Google


Sohian Khurd, Punjab, India
Unnamed Road, Sohian Khurd, Punjab 143501, India
Lat 31.691115°
Long 74.971243°
15/11/21 12:01 PM
Google
Global


Sohian Khurd, Punjab, India
Unnamed Road, Sohian Khurd, Punjab 143501, India
Lat 31.690999°
Long 74.971339°
15/11/21 12:00 PM
Google
Global

ENVIRONMENT AUDIT

(Documents for Prevention and Control of Air Pollution)

QJG

05-NOV-2021

QUANTUM JUMP CONSULTING GROUP

Certificate for Environment Audit

This is to certify that our team has conducted detailed Environment Audit of Global Group of Institutes,11th Km Stone, Sohian Khurd, Amritsar-Jammu Highway, NH-54, Amritsar – 143501.

The activities and measures carried out by the Institutes have been verified and found to be satisfactory.

The efforts put by Faculty, Staff and Students towards Environment and Sustainability is highly appreciable and Commendable.

(Ranjan Vasishtha)

MD- QJCG

A-11/6, Vasant Vihar, New Delhi – 110057; Phone: 011-26144542, 9899197784; E-mail: ranjanv777@gmail.com

Certificate of Registration

This is to certify that the Quality Management System of

GLOBAL GROUP OF INSTITUTES

(MANAGED BY GURU HAR RAI EDUCATIONAL SOCIETY)
11TH KM STONE, SOHIAN KHURD, BATALA ROAD,
AMRITSAR, PUNJAB (INDIA)

has been successfully assessed &
conforms with the following standard

ISO 9001:2015

Scope of Certification

PROVIDING DEGREE / DIPLOMA IN ENGINEERING, COMPUTER APPLICATIONS, MANAGEMENT, PHARMACY, PARA-MEDICAL, AGRICULTURE, HOTEL MANAGEMENT & TOURISM MANAGEMENT

Certificate No.: SMS/QMS/J21/3106

Initial Registration Date	: **27-10-2021**	**Issue Date**	: **27-10-2021**
Surveillance 1 Audit Date	: **27-09-2022**	**Expiry Date**	: **26-10-2024**
Surveillance 2 Audit Date	: **27-09-2023**		

UAF is Member of International Accreditation Forum (IAF)

Signature of Director

Accreditation No. CB-MS-2809
(Accredited by United Accreditation Foundation (UAF),
400 North Center DR, STE 202, Norfolk, VA 23502, United States of America
To Check Certification Status:
www.uafaccreditation.org & www.saaracertification.com

SAARA MANAGEMENT SYSTEM PRIVATE LIMITED
F-7, Top Floor, Main Road, Kalkaji, New Delhi-110019, India
E-mail: saaramsp@gmail.com Website: www.saaracertification.com

ISO 14001:2015

WRG CERTIFICATIONS

INTERNATIONALLY RECOGNISED

Certificate Of Registration

WRG Certifications hereby certifies that the Environment Management System of:

GLOBAL GROUP OF INSTITUTES
(MANAGED BY GURU HAR RAI EDUCATIONAL SOCIETY)

11th Km Stone, Sohian Khurd, Betala Road, Amritsar, Punjab (India)

has been assessed and found to operate in compliance and meets the requirement of following standard

ISO 14001:2015 (EMS)

for the scope of:

Providing Degree / Diploma in Engineering, Computer Applications, Management, Pharmacy, Para-Medical, Agriculture, Hotel Management & Tourism Management

Initial date of certification	: Sep 02, 2019
Current date of certification	: Sep 02, 2019
Date of expiry	: Sep 01, 2022

(Subject to surveillance mark present)

1st Surveillance Date	: Aug 2020
2nd Surveillance Date	: Aug 2021

Certificate No.	: EMS-MMXXI-9-10067
NACE Code	: N-85.12

WRG Certifications

A.dhangal

Authorised Signatory

AIAO-BAR ★★★★★ EMS ACCREDITED USA

WRG ISO 14001 REGISTERED

Registry information can be found at www.orgcert.com/register

ISO 14001

PERFECTION · COMMITMENT ·

PCMS

Certificate of Registration

This is to certify that
The Management Systems

Of

GLOBAL INSTITUTE OF MANAGEMENT AND EMERGING TECHNOLOGIES
(MANAGED BY GURU HAR RAI EDUCATIONAL SOCIETY)

at

11TH KM STONE, SOHIAN KHURD, BATALA ROAD, AMRITSAR (PUNJAB) (INDIA)

Has been found to conform to the Environmental Management System Standard:

ISO 14001:2015

This certificate is valid for the following Product or Service ranges:

ENGINEERING AND MANAGEMENT EDUCATION AS PER AICTE AND UNIVERSITY NORMS

CERTIFICATE NO. : PCMS/EMS/1125-2016
ISSUED ON : 02/09/2016
VALIDITY DATE : 01/09/2019

1ST SURVEILLANCE DUE ON: 02/08/2017
2ND SURVEILLANCE DUE ON: 02/08/2018

THE VALIDITY OF CERTIFICATE IS SUBJECT TO REGULAR SURVEILLANCE AUDIT ON OR BEFORE ABOVE MENTIONED DATES AND IT'S ONLY VALID AFTER SUCCESSFUL SURVEILLANCE WITH CONTINUATION LETTER ISSUED BY PCMS

AUTHORISED BY
CHAIRMAN / DIRECTOR

MEMBER OF MULTILATERAL RECOGNITION ARRANGEMENT
IAF

JAS-ANZ

Acc.No. : - M31112041N
www.jas-anz.org/register

P.C MANAGEMENT SYSTEM PVT. LTD.
134-A, IIND FLOOR, TAIMOOR NAGAR,
NEW FRIENDS COLONY, NEW DELHI – 110 065 (INDIA)
THIS IS SINGLE-SITE CERTIFICATION
WEBSITE - WWW.PCMSINDIA.COM
E-MAIL – PCMS@PCMSINDIA.COM

PUNJAB POLLUTION CONTROL BOARD

Zonal Office, Plot No. 164, Focal Point, Mehta Road, Sri Amritsar

Website:- www.ppcb.gov.in

Office Dispatch No : **Registered/Speed Post** **Date:**

Industry Registration ID: *O18ASR911866* **Application No :** *7732875*

To,

AKASHDEEP SINGH
CHANDI FARM, AKASH AVENUE
AMRITSAR,PUNJAB-143001

Subject: **Grant of 'Consent to Operate' u/s 21 of Air (Prevention & Control of Pollution) Act, 1981 for discharge of emissions arising out of premises.**

With reference to your application for obtaining 'Consent to Operate' u/s 21 of Air (Prevention & Control of Pollution) Act, 1981, you are hereby, authorized to operate an industrial unit for discharge of the emission(s) arising out of your premises subject to the Terms and Conditions as mentioned in this Certificate.

1. Particulars of Consent to Operate under Air Act, 1981 granted to the industry

Consent to Operate Certificate No.	*CTOA/Fresh/ASR/2018/7732875*
Date of issue :	*12/07/2018*
Date of expiry :	*30/09/2023*
Certificate Type :	*Fresh*

2. Particulars of the Industry

Name & Designation of the Applicant	*AKASHDEEP SINGH, (SECRETARY)*
Address of Industrial premises	*Guru har rai educational society (global institutes amritsar), Village sohian khurd, batala road , Amritsar (Amritsar-143501*
Capital Investment of the Industry	*1916.75 lakhs*
Category of Industry	*Orange*
Type of Industry	*2021-Building and construction project more than 20,000 sq. m built up area and having waste water generation less than 100 KLD*
Scale of the Industry	*Small*
Office District	*Amritsar*
Consent Fee Details	
Raw Materials (Name with Quantity per day)	*EDUCATIONAL INSTITUTE - 1500 STUDENTS @Metric Tonnes/Day*
Products (Name with Quantity per day)	*As per details submitted.*
By-products, if any, (Name with Quantity per day)	*As per details submitted.*

Details of the machinery and process	*As per details submitted.*
Quantity of fuel required (in TPD) and capacity of boilers/ Furnace/Thermo heater etc.	*As per details submitted.*
Type of Air Pollution Control Devices to be installed	*As per details submitted.*
Stack height provided with each boiler/thermo heater/Furnace etc.	*As per details submitted.*
Sources of emissions and type of pollutants	*As per details submitted.*
Standards to be acheived under Air(Prevention & Control of Pollution) Act, 1981	*As prescribed by the Board.*

For Senior Environmental Engineer

For & on behalf

of

(Punjab Pollution Control Board)

Endst. No.: **Dated:**

A copy of the above is forwarded to the following for information and necessary action please:

The EE, RO, Sri Amritsar.

For Senior Environmental Engineer

For & on behalf

of

(Punjab Pollution Control Board)

TERMS AND CONDITIONS

A. GENERAL CONDITIONS

1. This consent is not valid for getting power load from the Punjab State Power Corporation Ltd. or for getting loan from the financial institutions.
2. The industry shall apply for renewal /extension of consent at least two months before expiry of the consent.
3. The industry shall not violate any of the norms prescribed under the Air (Prevention & Control of Pollution) Act, 1981, failing which, the consent shall be cancelled / revoked.
4. The achievement of adequacy and efficiency of the air pollution control devices installed shall be the entire responsibility of the industry
5. The authorized fuel being used shall not be changed without the prior written permission of the Board.
6. The industry shall not discharge any fugitive emissions. All gases shall be emitted through a stack of suitable height, as per the norms fixed by the Board from time to time.
7. The industry shall provide port-holes, platforms and/or other necessary facilities as may be required for collecting samples of emissions from any chimney, flue or duct or any other outlets.

   Specifications of the port-holes shall be as under:-

   i) The sampling ports shall be provided atleast 8 times chimney diameter downstream and 2 times upstream from the flow disturbance. For a rectangular cross section the equivalent diameter (De) shall be calculated from the following equation to determine upstream, downstream distance:-

   De = 2 LW / (L+W)

   Where L= length in mts. W= Width in mts.

   ii) The sampling port shall be 7 to 10 cm in diameter
8. The industry shall put display Board indicating environmental data in the prescribed format at the main entrance gate.
9. The industry shall discharge all gases through a stack of minimum height as specified in the following standards laid down by the Board.

   (i) Stack height for boiler plants

S.NO.	Boiler with Steam Generating Capacity	Stack heights
1.	*Less than 2 ton/hr.*	9 meters or 2.5 times the height of neighboring building which ever is more
2.	*More than 2 ton/hr. to 5 ton/hr.*	12 meters
3.	*More than 5 ton/hr. to 10 ton/hr*	15 meters
4.	*More than 10 ton/hr. to 15 ton/hr*	18 meters
5.	*More than 15 ton/hr. to 20 ton/hr*	21 meters
6.	*More than 20 ton/hr. to 25 ton/hr.*	24 meters
7.	*More than 25 ton/hr. to 30 ton/hr.*	27 meters
8.	*More than 30 ton/hr.*	30 meters or using the formula H = 14 Qg0.3or H = 74 (Qp)0.24 Where Qg = Quantity of SO2 in Kg/hr. Qp = Quantity of particulate matter in Ton/day.

Note : Minimum Stack height in all cases shall be 9.0 mtr. or as calculated from relevant formula whichever is more.

(ii) For industrial furnaces and kilns, the criteria for selection of stack height would be based on fuel used for the corresponding steam generation.

(iii) Stack height for diesel generating sets:

Capacity of diesel generating set	Height of the Stack	
0-50 KVA	Height of the building	+ 1.5 mt
50-100 KVA	-do-	+ 2.0 mt.
100-150 KVA	-do-	+ 2.5 mt.
150-200 KVA	-do-	+ 3.0 mt.
200-250 KVA	-do-	+ 3.5 mt.
250-300 KVA	-do-	+ 3.5 mt.

For higher KVA rating stack height H (in meter) shall be worked out according to the formula:

$$H = h+0.2 (KVA)0.5$$

where h = height of the building in meters where the generator set is installed.

10. The pollution control devices shall be interlocked with the manufacturing process of the industry to ensure its regular operation.

11. The existing pollution control equipment shall be altered or replaced in accordance with the directions of the Board, and no pollution control equipment or chimney shall be altered or as the case may be erected or re-erected except with the prior approval of the Board.

12. The industry will provide canopy and adequate stack with the D.G sets so as to comply with the provision of notification No GSR-371 E dated 17-5-2002(amended from time to time) issued by MOEF under Environment (Protection) Act, 1986.

13. The Govt. of Punjab, Department of Science, Technology & Environment vide its notification no.4/46/92-3ST/2839 dt. 29/12/1993 has put prohibition on the use of rice husk as fuel after 1.4.1995 except the following:-

"In the form of briquettes and use of rice husk in fluidized bed combustion.So the industry shall make the necessary arrangement to comply with the above notification."

14. The industry shall submit balance sheet of every financial year to the concerned Regional Office by 30th June of every year

15. That the industry shall submit a yearly certificate to the effect that no addition / up-gradation/ modification/ modernization his been carried out during the previous year otherwise the industry shall apply for the varied consent.

16. a) The industry shall ensure that at any time the emission do not exceed the prescribed emissions standards laid down by the Board from time to time for such type of industry /emissions.

    b) The industry shall ensure that the emissions from each stack shall conform to the following emission standards laid down by the Board in respect of the Industrial Boilers.

Steam Generating capacity A.	*Required particulate matter B.*	
Area upto 5 Km from Other than the periphery of I and Class-II town	*'A' class*	
Less than 2 ton/hr.	800 mg/NM3	1200 mg/NM3
2 ton to 10 ton/hr.	500 mg/NM3	1000 mg/NM3
Above 10 ton to 15 ton/hr	350 mg/NM3	500 mg/NM3
Above 15 ton/hr	150 mg/NM3	150 mg/NM3

All emissions normalized to 12% carbon dioxide.

17. The industry shall ensure that the Hazardous Wastes generated from the premises are handled as per the provisions of theHazardous Waste (Management, Handling and Transboundary Movement) Rules, 2008, without any adverse effect on the environment, in any manner.

18. The air pollution control equipments shall be kept at all time in good running condition and;

(i) All failures of control equipments.

(ii) The emissions of any air pollutant into the atmosphere in excess of the standards lay down by the Board occurring or being apprehended to occur due to accident or other unforeseen act or event. 'Shall be intimated through fax to the concerned Regional Office as well as to the Director of Factories, Punjab, Chandigarh as required under rule 10 of the Punjab State Board for the Prevention and Control of Air Pollution Rules, 1983'.

19. The industry shall plant minimum of three suitable varieties of trees at the density of not less than 1000 trees per hectare all along the boundary of the industrial premises.

20. The industry shall submit a site emergency plan approved by the Chief Inspector of Factories, Punjab as applicable.

21. The industry shall comply with the conditions imposed by the SEIAA/MOEF in the Environmental Clearance granted to it as required under EIA notification dated 14/9/06, if applicable.

22. The industry shall make necessary arrangements for the monitoring of stack emissions and shall get its emissions analyzed from lab approved / authorized by the Board:-

(i) Once in Year for Small Scale Industries.

(ii) Twice/thrice/four time in a Year for Large/Medium Scale Industries.

23. The industry shall maintain the following record to the satisfaction of the Board :-

(i) Log books for running of air pollution control devices or pumps/motors used for it.

(ii) Register showing the result of various tests conducted by the industry for monitoring of stack emissions and ambient air.

(iii) Register showing the stock of absorbents and other chemicals to be used for scrubbers.

24. The industry will install the separate energy meter for running pollution control devices and shall maintain record with respect to operation of air pollution control device so as to the satisfy the Board regarding the regular operation of air pollution control device and monthly reading / record may be sent to the Board by the fifth of the following month.

25. The industry shall provide online monitoring system as applicable, for in stack emission and shall maintain the record of the same for inspection of the Board Officers.

26. The Board reserves the right to revoke the consent granted to the industry at any time, in case the industry is found violating the provisions of Air (Prevention & Control of Pollution) Act, 1981 as amended from time to time.

27. The industry shall comply with any other conditions laid down or directions issued in due course by the Board under the provisions of the Air (Prevention & Control of Pollution) Act, 1981.

28. Nothing in this consent shall be deemed to neither preclude the institution of any legal action nor relieve the applicant from any responsibilities, liabilities or penalties to which the applicant is or may be subjected to under this or any other Act.

29. Any amendments/revisions made by the Board/CPCB/MOEF in the emission/stack height standards shall be applicable to the industry from the date of such amendments/revisions.

30. The industry shall dispose off its solid waste generated by the burning of fuel in an Environmentally Sound Manner within the premises/outside as approved by the Board, to avoid public nuisance and air pollution problem in the area.

31. The industry shall ensure that no air pollution problem or public nuisance is created in the area due to the discharge of emissions from the industry.

32. The industry shall provide adequate arrangement for fighting the accidental leakage/discharge of any air pollutant/gas/ liquids from the vessels, mechanical equipment's etc, which are likely to cause environmental pollution.

33. The industry shall not change or alter the manufacturing process(es) and fuel so as to change the quality/quantity of emissions generated without the prior permission of the Board.

34. The industry shall earmark a land within their premises for disposal of boiler ash in an environmentally sound manner, and / or the industry shall make necessary arrangements for proper disposal of fuel ash in a scientific manner and shall maintain proper record for the same, if applicable.

35. The industry shall obtain and submit Insurance cover under the Public Liability Insurance Act, 1991.

36. The industry shall provide proper and adequate air pollution control arrangements for control emission from its fuel handling area, if applicable.

37. The industry shall comply with the code of practice as notified by the Government/Board for the type of industries where the siting guidelines / Code of Practice have been notified.

38. The industry shall not cause any nuisance/traffic hazard in vicinity of the area.

39. The industry shall ensure that the noise & air emission from D.G. sets do not exceed the standards prescribed for D.G. sets by the Ministry of Environment & Forests, New Delhi.

40. The industry shall ensure that there will not be significant visible dust emissions beyond the property line

41. The industry shall provide adequate and appropriate air pollution control devices to contain emissions from handling, transportation and processing of raw material & product of the industry.

42. The Industry shall ensure that its production capacity does not exceed the capacity mentioned in the consent and shall not carry out any expansion without the prior permission / NOC of the Board.

B. SPECIAL CONDITIONS

The Punjab Govt. vide its notification no. 5/18/2016-4lg4/692717/1 dated 18/2/2016 has completely prohibit the manufacture, stock, distribute, re-cycle, sell or use of Plastic Carry Bags in the State of Punjab w.e.f. 01/04/2016.

The HCF/industry shall only use Compostable/Bio-degradable Carry bags as approved and authorized by Central Pollution Control Board/ Punjab Pollution Control Board.

For Senior Environmental Engineer

For & on behalf

of

(Punjab Pollution Control Board)

ENVIRONMENT AUDIT

(Documents for Prevention and Control of Water Pollution)

PUNJAB POLLUTION CONTROL BOARD

Zonal Office, Plot No. 164, Focal Point, Mehta Road, Sri Amritsar

Website:- www.ppcb.gov.in

Office Dispatch No : **Registered/Speed Post** **Date:**

Industry Registration ID: *O18ASR911866* **Application No :** *7737643*

To,

AKASHDEEP SINGH
CHANDI FARM, AKASH AVENUE
AMRITSAR,PUNJAB-143001

Subject: **Grant of 'Consent to Operate'an outlet u/s 25/26 of Water (Prevention & Control of Pollution) Act, 1974 for discharge of effluent.**

With reference to your application for obtaining 'Consent to Operate' an outlet for discharge of the effluent u/s 25/26 of Water (Prevention & Control of Pollution) Act, 1974, you are, hereby, authorized to operate an industrial unit fordischarge of the effluent(s) arising out of your premises subject to the Terms and Conditions as mentioned in this Certificate.

1. Particulars of Consent to Operate under Water Act, 1974 granted to the industry

Consent to Operate Certificate No.	*CTOW/Fresh/ASR/2018/7737643*
Date of issue :	*12/07/2018*
Date of expiry :	*30/09/2023*
Certificate Type :	*Fresh*

2. Particulars of the Industry

Name & Designation of the Applicant	*AKASHDEEP SINGH, (SECRETARY)*
Address of Industrial premises	*Guru har rai educational society (global institutes amritsar), Village sohian khurd, batala road , Amritsar i,Amritsar-143501*
Capital Investment of the Industry	*1916.75 lakhs*
Category of Industry	*Orange*
Type of Industry	*2021-Building and construction project more than 20,000 sq. m built up area and having waste water generation less than 100 KLD*
Scale of the Industry	*Small*
Office District	*Amritsar*
Consent Fee Details	
Raw Materials(Name with quantity per day)	*EDUCATIONAL INSTITUTE - 1500 STUDENTS @Metric Tonnes/Day*
Products (Name with quantity per day)	*As per details submitted.*
By-Products, if any,(Name with quantity per day)	*As per details submitted.*
Details of the machinary and processes	*As per details submitted.*
Details of the Effluent Treatment Plant	*Domestic Effluent @85.0 KLD*

Mode of Disposal	*PLANTATION (2 ACRES), HORTICULTURE/GARDENING (5.0 ACRES)*
Standards to be achieved under Water(Prevention & Control of Pollution) Act, 1974	*As prescribed by the Board.*

For Senior Environmental Engineer

For & on behalf

of

(Punjab Pollution Control Board)

Endst. No.: **Dated:**

A copy of the above is forwarded to the following for information and necessary action please:

The EE, RO, Sri Amritsar.

For Senior Environmental Engineer

For & on behalf

of

(Punjab Pollution Control Board)

TERMS AND CONDITIONS

A. GENERAL CONDITIONS

1. This consent is not valid for getting power load from the Punjab State Power Corporation Limited or for getting loan from the financial institutions.
2. The industry shall apply for renewal/farther extension in validity of consent atleast two months before expiry of the consent.
3. The industry shall ensure that the effluent discharging through the authorized outlet shall confirm to the prescribed standards as applicable from time to time.
4. The industry shall plant minimum of three suitable varieties of trees at the density of not less than 1000 trees per hectare all along the boundary of the industrial premises.
5. The achievement of the adequacy and efficiency of the effluent treatment plant/pollution control devices/re-circulation system installed shall be the entire responsibility of the industry.
6. The industry shall ensure that the Hazardous Wastes generated from the premises are handled as per the provisions of the Hazardous Wastes(Management, Handling and Trans boundary Movement) Rules, 2008 as amended time to time , without any adverse effect on the environment, in any manner
7. The responsibility to monitor the effluent discharged from the authorized outlet and to maintain a record of the same rests with the industry. The Board shall only test check the accuracy of these reports for which the industry shall deposit the samples collection and testing fee with the Board as and when required.
8. The industry shall submit balance sheet of every financial year to the concerned Regional Office by 30th June of every year.
9. The industry shall submit a yearly certificate to the effect that no addition/up-gradation/ modification/ modernization has been carried out during the previous year otherwise the industry shall apply for the varied consent.
10. During the period beginning from the date of issuance and the date of expiration of this consent, the applicant shall not discharge floating solids or visible foam.
11. Any amendments/revisions made by the Board in the tolerance limits for discharges shall be applicable to the industry from the date of such amendments/revisions.
12. The industry shall not change or alter the manufacturing process(es) so as to change the quality and/or quantity of the effluents generated without the written permission of the Board.
13. Any upset conditions in the plant/plants of the factory, which is likely to result in increased effluent and/or result in violation of the standards lay down by the Board shall be reported to the Environmental Engineer, Punjab Pollution Control Board of concerned Regional Office immediately failing which any stoppage and upset conditions that come to the notice of the Board/its officers, will be deemed to be intentional violation of the conditions of consent.
14. The industry shall provide terminal manhole(s) at the end of each collection system and a manhole upstream of final outlet (s) out of the premises of the industry for measurement of flow and for taking samples.
15. The industry shall for the purpose of measuring and recording the quantity of water consumed and effluent discharged, affix meters of such standards and at such places as approved by the Environmental Engineer, Punjab Pollution Control Board of the concerned Regional Office.
16. The industry shall maintain record regarding the operation of effluent treatment plant i.e. record of quantity of chemicals and energy utilized for treatment and sludge generated from treatment so as to satisfy the Board regarding regular and proper operation of pollution control equipment.
17. The industry shall provide online monitoring equipment's for the parameters as decided by concerned Regional Office with the effluent treatment plant/air pollution control devices installed, if applicable.
18. The pollution control devices shall be interlocked with the manufacturing process of the industry.
19. The authorized outlet and mode of disposal shall not be changed without the prior written permission of the Board.
20. The industry shall comply with the conditions imposed by the SEIAA / MOEF in the environmental clearance granted to it as required under EIA notification dated14/9/06, if applicable.
21. The industry shall obtain and submit Insurance cover as required under the Public Liability Insurance Act, 1991.
22. The industry shall not use any unauthorized out-let(s) for discharging effluents from its premises. All unauthorized outlets, if any, shall be connected to the authorized outlet within one month from the date of issue of this consent.

23. The industry shall make necessary arrangements for the monitoring of effluent being discharged by the industry and shall monitor its effluents:-

(i) Once in Year for Small Scale Industries.

(ii) Four in a Year for Large/Medium Scale Industries.

(iii) The industry will submit monthly reading/ data of the separate energy meter installed for running of effluent treatment plant/re-circulation system to the concerned Regional Office of the Board by the 5th of the following month.

24. The industry shall provide electromagnetic flow meters at the source of water supply, at inlet/outlet of effluent treatment plant within one month and shall maintain the record of the daily reading and submit the same to the concerned Regional Office by the 5th of the following month.

25. The Board reserves the right to revoke this consent at any time in case the industry is found violating any of the conditions of this consent and/or the provisions of Water (Prevention & Control of Pollution) Act, 1974 as amended from time to time.

26. The issuance of this consent does not convey any property right in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Central, State or Local Laws or Regulations.

27. The consent does not authorize or approve the construction of any physical structures or facilities for undertaking of any work in any natural watercourse.

28. Nothing in this consent shall be deemed to neither preclude the institution of any legal action nor relieve the applicant from any responsibilities, liabilities or penalties to which the applicant is or may be subjected under this or any other Act.

29. The industry shall make necessary and adequate arrangements to hold back the effluent in case of failure of septic tank.

30. The diversion or bye pass of any discharge from facilities utilized by the applicant to maintain compliance with the terms and conditions of this consent is prohibited except.

(i) Where unavoidable to prevent loss of life or some property damage or

(ii) Where excessive storm drainage or run off would damage facilities necessary for compliance with terms and conditions of this consent. The applicant shall immediately notify the consent issuing authority in writing of each such diversion or bye-pass.

31. The industry shall ensure that no water pollution problem is created in the area due to discharge of effluents from its industrial premises.

32. The industry shall comply with the code of practice as notified by the Government/ Board for the type of industries where the siting guidelines/ code of practice have been notified.

33. Solids, sludge, filter backwash or other pollutant removed from or resulting from treatment or control of waste waters shall be disposed off in such a manner to prevent any pollutants from such materials from entering into natural water.

34. The industry shall re-circulate the entire cooling water and shall also re-circulate/reuse to the maximum extent the treated effluent in processes

35. The industry shall make necessary and adequate arrangements to hold back the effluent in case of failure of re-circulation system/ effluent treatment plant.

36. The industry shall make proper disposal of the effluent so as to ensure that no stagnation occurs inside and outside the industrial premises during rainy season and no demand period.

37. Where excessive storm water drainage or run off, would damage facilities necessary for compliance with terms and conditions of this consent, the applicant shall immediately notify the consent issuing authority in writing of each such diversion or bye-pass.

38. The industry shall submit a detailed plan showing therein the distribution system for conveying waste-water for application on land for irrigation along with the crop pattern for the year.

39. The industry shall ensure that the effluent discharged by it is toxicity free.

40. The industry shall not irrigate the vegetable crops with the treated effluents which are used/ consumed as raw.

41. Drains causing oil & grease contamination shall will be segregated. Oil & grease trap shall be provided to recover oil & grease from the effluent.

42. The industry shall establish sufficient number of piezometer wells in consultation with the concerned Regional Office, of the Board to monitor the impact on the Ground Water Quantity due to the industrial operations, and the monitoring shall be submitted to the Environmental Engineer of the concerned Regional Office by the 5th of every month.

43. The industry shall ensure that its production capacity & quantity of trade effluent do not exceed the quantity mentioned in the consent and shall not carry out any expansion without the prior permission/NOC of the Board.

B. SPECIAL CONDITIONS

The Punjab Govt. vide its notification no. 5/18/2016-4lg4/692717/1 dated 18/2/2016 has completely prohibit the manufacture, stock, distribute, re-cycle, sell or use of Plastic Carry Bags in the State of Punjab w.e.f. 01/04/2016.

The HCF/industry shall only use Compostable/Bio-degradable Carry bags as approved and authorized by Central Pollution Control Board/ Punjab Pollution Control Board.

For Senior Environmental Engineer

For & on behalf

of

(Punjab Pollution Control Board)


GPS Map Camera
Jethuwal, Punjab, India
MXRC+8Q7, Jethuwal, Punjab 143501, India
Lat 31.690856°
Long 74.971888°
24/12/21 03:09 PM


GPS Map Camera
Jethuwal, Punjab, India
Unnamed Road, Jethuwal, Punjab 143501, India
Lat 31.691164°
Long 74.971807°
24/12/21 03:10 PM

SPRECO RECYCLING

(Punjab Pollution Control Board authorized E-waste Recycler)
Deals in: Waste of Electronic & Electrical Equipments

Corporate Office-SCO 13 ,Opp. Govt. High School, Mohinder Ganj Road, Rajpura, Patiala (PB)-140401
Processing Plant- D-45, Industrial Focal Point, Raikot , Ludhiana
HELPLINES : 083604-33051, 090412-99968
Email-sprecorecycling@rediffmail.com
Website : www.sprecorecycling.com

Spreco Recycling

MEMBERSHIP AND E-WASTE OFF TAKE AGREEMENT

This agreement is made on 20th DECEMBER , 2021 between SPRECO RECYCLING, D-45, Industrial Focal Point, Raikot, Ludhiana-141106 (Punjab) here in after called Operator, Recycler, E- WASTE RECYCLING through its Managing Partner, Mr. Amanjot Singh.

AND

Global Group of Institutes, 11th KM Stone, Sohian Khurd, Amritsar – Jammu Highway, AMRITSAR - 143501, (Punjab) here in after called Generator through its Campus Director, Dr. M.S. Saini.

Whereas

1. SPRECO RECYCLING is engaged in collection of E-Waste and recycling.
2. The Generator desires to get its E-waste , being generated at the production units mentioned above as per the requirement of Punjab Pollution Control Board to be collected by the authorized recycler , to which the recycler has agreed on the terms and conditions in this agreement.
3. The generator shall not sell the E-waste to any other person or bill to any other person. In case the generator sells the E-waste to any other person other than Spreco Recycling , the present agreement shall be CANCELLED.
4. The generator shall ensure that the E-waste is packaged in a manner which enables it suitable for storage and transport and the labeling and packaging shall be easily visible and be able to withstand physical conditions and climate factors, such packaging and labeling should be in full compliance of the rules.
5. Through this agreement, Spreco Recycling commits to providing E-waste collection services to the said generator.
6. Spreco Recycling shall provide the generator with all the details of the E-waste material that will be lifted from generator site whenever desired by the generator.
7. Spreco Recycling is also liable in disposing off material as per the regulations laid under E-waste management and handling rules, 2011.
8. Providing information to Spreco Recycling regarding the generation of any kind of E-waste shall be entirely the generator responsibility over course of this agreement.

SPRECO RECYCLING RAJPURA

9. This agreement shall be valid for ONE (1) Year starting from 20/12/2021 to 19/12/2022.
10. This agreement may be modified or amended only by writing , duly executed by or on behalf of the parties hereto.
11. A person lifting the E-waste should have an Authorization letter.

IN WITNESS WHEREOF the Parties hereto have executed this Agreement the day and year first here in above written.

For Sparky Recycling

For Global Group of Institutes

GLOBAL GROUP OF INSTITUTES
CAMPUS DIRECTOR
AMRITSAR

Place: Wadhawa

Date: 20/12/21.