

# Criterion - 7

## Institutional Values and Best Practices

NAAC- SSR (2<sup>nd</sup> Cycle)



# ETERNAL UNIVERSITY

BARU SAHIB, SIRMOUR-173101  
HIMACHAL PRADESH

# 7.1.6 (1)

## Green Audit/Environment audit



**ETERNAL UNIVERSITY**

BARU SAHIB, SIRMOUR-173101  
HIMACHAL PRADESH





# ETERNAL UNIVERSITY

BARU SAHIB, DISTT SIRMAUR, NEAR RAJGARH,  
HIMACHAL PRADESH 173101

# GREEN AUDIT REPORT

PREPARED BY  
EHS ALLIANCE SERVICES

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# AUDIT CERTIFICATE



CERTIFICATE NO. EHSAC48A

# CERTIFICATE

PRESENTED TO

# M/S ETERNAL UNIVERSITY

Baru Sahib, Distt Sirmaur, near Rajgarh, Himachal Pradesh, 173101

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

## GREEN AUDIT

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

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



SIGNATURE



27.10.2021  
DATE OF AUDIT

## ACKNOWLEDGEMENT

EHS Alliance Services would like to thank the management of Eternal University for assigning this important work of Green Audit. We appreciate the co-operation to the teams for completion of assessment.

We would also like to thank Dr. Narinder Pal Singh, Dean Research (Volunteering) of the University for his Continuous Support and guidance, without which the completion of the project will not be possible. We are also thankful to other staff members who were actively involved while collecting the data and conducting field measurements.

We are also thankful to

*Dr. B. S. Sohal - Dean PGS*

*Dr. A. S. Ahluwalia – Pro Vice Chancellor*

*Dr. S. K. Sharma – Dean DKSGACA*

*Mr. Santosh Shukla – In-charge AHKS*

Last but not the least; we would like to thank Dr. Davinder Singh, Hon'ble Vice Chancellor of Eternal University for giving us an opportunity to evaluate the environmental performance of the campus.



## DISCLAIMER

EHS Alliance Services Audit Team has prepared this report for Eternal University based on input data submitted by the representatives of University complemented with the best judgment capacity of the expert team.

While all sensible care has been taken in its preparation, details contained in this report have been compiled in good faith based on information gathered.

It is further informed that the conclusions are arrived following best estimates and no representation, warranty or undertaking, express or implied is made and no responsibility is accepted by Audit Team in this report or for any direct or consequential loss arising from any use of the information, statements or forecasts in the report.

If you wish to distribute copies of this report external to your organisation, then all pages must be included.

EHS Alliance, its staff and agents shall keep confidential all information relating to your organisation and shall not disclose any such information to any third party, except that in the public domain or required by law or relevant accreditation bodies.

EHS Alliance staff, agents and accreditation bodies have signed individual confidentiality undertakings and will only receive confidential information on a 'need to know' basis.



Signature

**LEAD AUDITOR**



## || CONCEPT AND CONTEXT

The National Assessment and Accreditation Council, New Delhi (NAAC) has made it mandatory from the academic year 2019–20 onwards that all Higher Educational Institutions should submit an annual Green, Environment and Energy Audit Report. Green Audit is assigned to the Criteria 7 of NAAC, National Assessment and Accreditation Council which is a self-governing organization of India that declares the institutions as Grade A, Grade B or Grade C according to the scores assigned at the time of accreditation. Moreover, it is part of Corporate Social Responsibility of the Higher Educational Institutions to ensure that they contribute towards the reduction of global warming through Carbon Footprint reduction measures.

In view of the NAAC circular regarding Green auditing, the University management decided to conduct an external environment assessment study by a competent external professional auditor. The green audit aims to examine environmental practices within and outside the college/university campus, which impact directly or indirectly on the atmosphere. Green audit can be defined as systematic identification, quantification, recording, reporting and analysis of components of university/college environment. It was initiated with the intention of reviewing the efforts within the institutions whose exercises can cause risk to the health of inhabitants and the environment.

Through the green audit, a direction as how to improve the structure of environment and inclusion of several factors that can protect the environment can be commenced. This audit focuses on the Green Campus, Waste Management, Water Management, Air Pollution, Energy Management & Carbon Footprint etc. being implemented by the institution. The concepts, structure, objectives, methodology, tools of analysis, objectives of the audit are discussed below.

## || INTRODUCTION

Now days, the educational institutions are becoming more thoughtful towards the environmental aspects and as a result new and innovative concepts are being introduced to make them sustainable and eco-friendly. To preserve the environment within the institution, a number of viewpoints are applied by the several educational institutes to solve their environmental problems such as promotion of the saving the energy, waste recycle, water consumption reduction, water harvesting and many more...

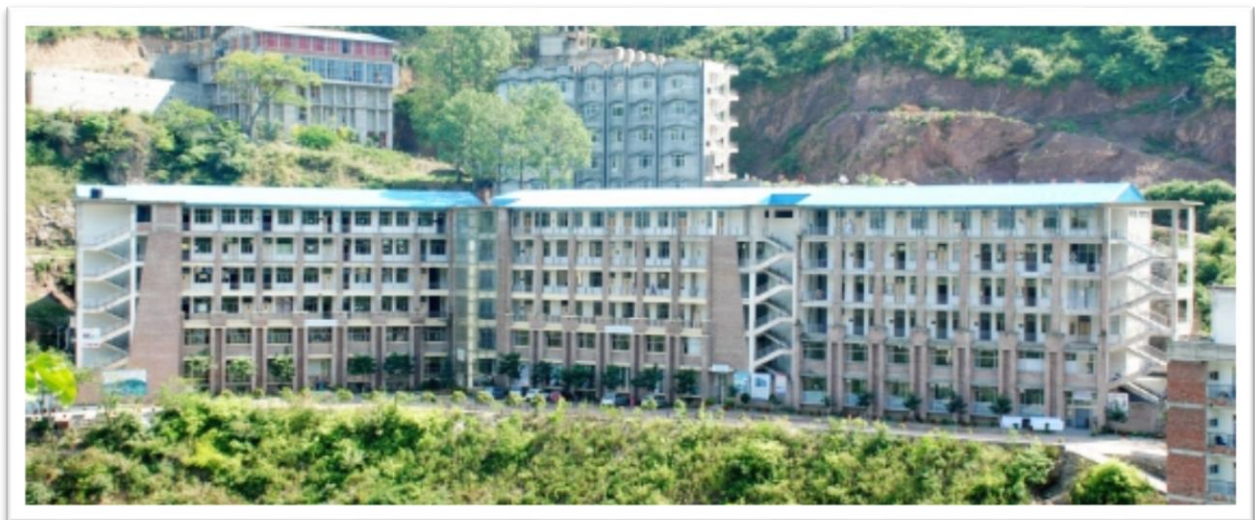
The activities carried out by the institution can also create adverse environmental impacts. Green audit is defined as an official inspection of the effects a University has on the environment. Green Audit is conducted to evaluate the actual scenario at the institution campus. Green audit can be a useful tool for a University/college to determine how and where they are using the most of the energy or water or resources; the University can then decide how to implement changes and make savings. It can also be

used to determine the nature and volume of waste, which can be used for a recycling project or to improve waste minimization plan.

Green auditing and the application of mitigation measures is a win-win situation for all the institutions, the learners and the mother earth. It can also result in health awareness and can promote the environmental awareness, values and beliefs. It provides a better understanding to staff and students about the Green impact on institution. Green auditing also upholds financial savings through reduction of resource usage. It gives an opportunity to the students and teachers for the development of ownership of the personal and social responsibility. The audit process involves primary data collection, site walk through with the team of University/college including the assessment of policies, activities, documents and records.

## || OVERVIEW OF THE UNIVERSITY

Eternal university is NAAC Accredited & ISO 9001: 2015 Certified University established under the Himachal Pradesh Private University (Establishment & Regulation) Act 2006 & Himachal Pradesh Government Act.no. 3 of 2009, with the right to confer degree as per the UGC public notice on private Universities dated April 18, 2011.



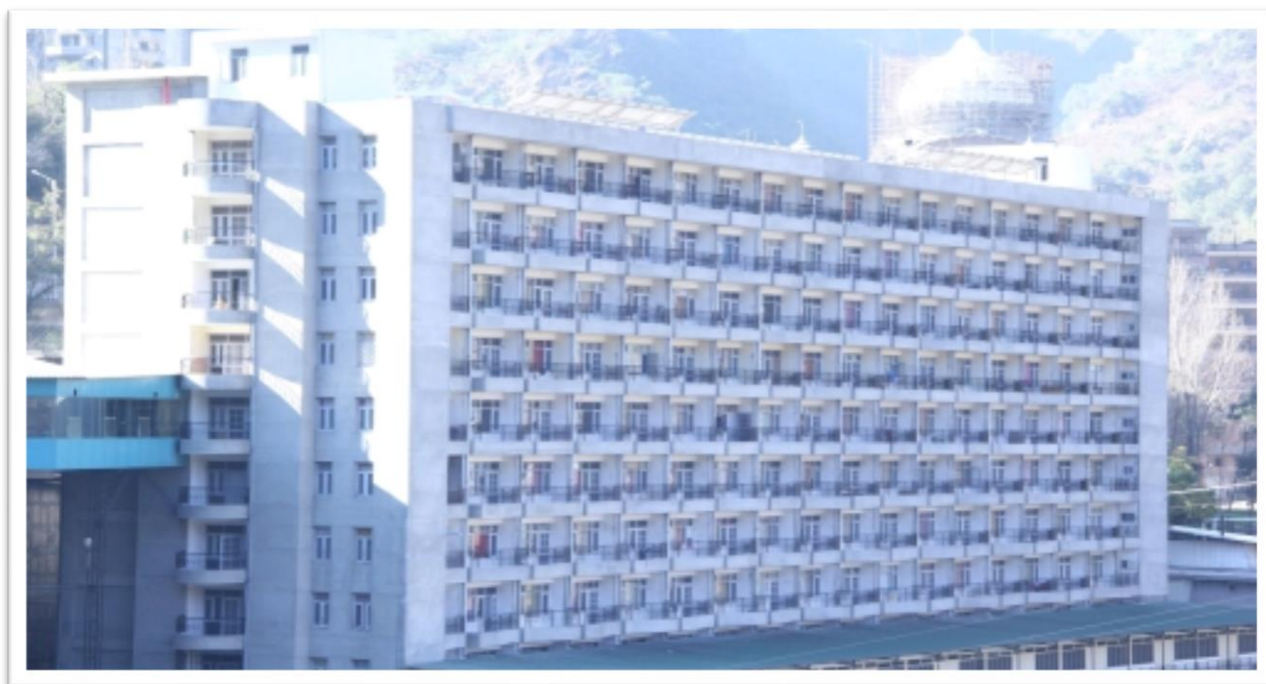
The great visionary of 20th century (Sant Attar Singh Ji) had a vision that modern scientific education alone will not serve the humanity well, until and unless it is amalgamated with Brahm Vidya (Spiritual Education). The graduates of this unique education system will not only be outstanding in academics, but also will have high moral values (i.e. they will have love for humanity, compassion for the weak and the underdog, and sense of selfless service for the community). These graduates will work towards establishing permanent peace in the world. They will act as Ambassadors of Peace wherever they live, work and raise their families.

Eternal University with its seven constituent colleges is unique in imparting value based education to girl students and is the first private university of Himachal Pradesh to start College of Nursing, School of Public Health and College of Agriculture. Among several previous recognitions the Eternal University has been recently recognized as “The 20th Best Higher Education Institution in India, 2019 which are providing a broader perspective and cutting edge higher education with a focal point on fostering skills and innovation” by EDUCATION BRAINIAC magazine.



In a largely residential campus the day-scholar girl students from nearby areas of Sirmour district who could commute from home can now also pursue their studies in the Eternal University. Situated in the Valley of Divine Peace the Modern Gurukul is providing safest, drug and pollution free environment with facilities such as sports complex, gymnasium, NSS and NCC units, experimental farms, poly houses, modern dairy complex, solar power utilization systems and support for holistic development of its students. The Eternal University has organized several conferences, workshops, camps and Kisan Melas with emphasis to address the crucial problems of farmers of Sirmour and adjoining districts of Himachal Pradesh for their inclusive development.



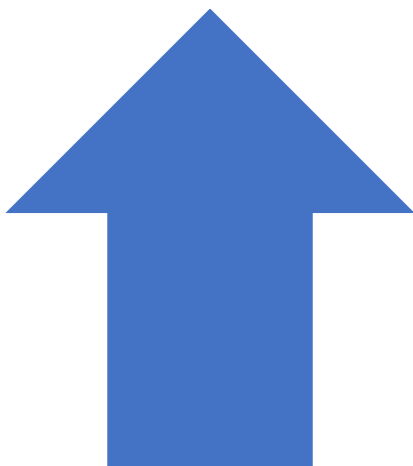


University offers 17 Bachelor programmes, 27 Master Programmes and 19 Doctorate Programmes.

Bachelor Programme	Masters Programme	Doctorate Programme
B.Sc. (Hons) Agriculture	M.Sc. Biotechnology	Ph.D. Biotechnology
B.Tech. Food Technology	M.Sc. Agronomy	Ph.D. Food Technology
B.Tech. CSE	M.Sc. Ag. Genetics & Plant Breeding	Ph.D. CSE
B.Sc. Information Technology	M.Sc. Ag. (Entomology)	Ph.D. Botany
B.Sc. Non-Medical	M.Sc. Ag. (Horticulture) Vegetable Science	Ph.D. Chemistry
B.Sc. (Hon.) Mathematics	M.Sc. Ag. (Horticulture) Fruit Science	Ph.D. Microbiology
B.Sc. (Hons.) Microbiology	M.Sc. Ag. Horticulture (Floriculture & Landscape Architecture)	Ph.D. Mathematics
B.Sc. (Hons.) Economics	M.Sc. Ag. Plant Pathology	Ph.D. Physics
B. Ed	M.Sc. Agricultural Economics	Ph.D. Zoology
B.Com (Hons.)	M.Sc. Food Science & Technology	Ph.D. Economics
B.B.A.New	M.Tech. Food Technology	Ph.D. Management
B.A. (Hons.) Music	M.Tech. CSE	Ph.D. English
B.A. Humanities	M.Sc. Botany	Ph.D. Music
B.Sc. (Hons.) Psychology	M.Sc. Chemistry	Ph.D. Public Health
B. Lib	M.Sc. Mathematics	Ph.D. Horticulture(Veg Science)
B.Sc. Medical		Ph.D. Agronomy
B.Tech. CSE		Ph.D. Entomology
Lateral/Migrated		Ph.D. Commerce
		Ph.D. Punjabi

	<p>M.Sc. Microbiology  M.Sc. Physics  M.Sc. Zoology  M.P.H  M.Sc. Economics  M.Com.  Master of Business Administration  M.A. Music  M.A. (Hons.) Punjabi  M.Sc. Psychology  M.A. English  M.A. Education</p>	
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## MISSION AND VISION OF ETERNAL UNIVERSITY



### MISSION

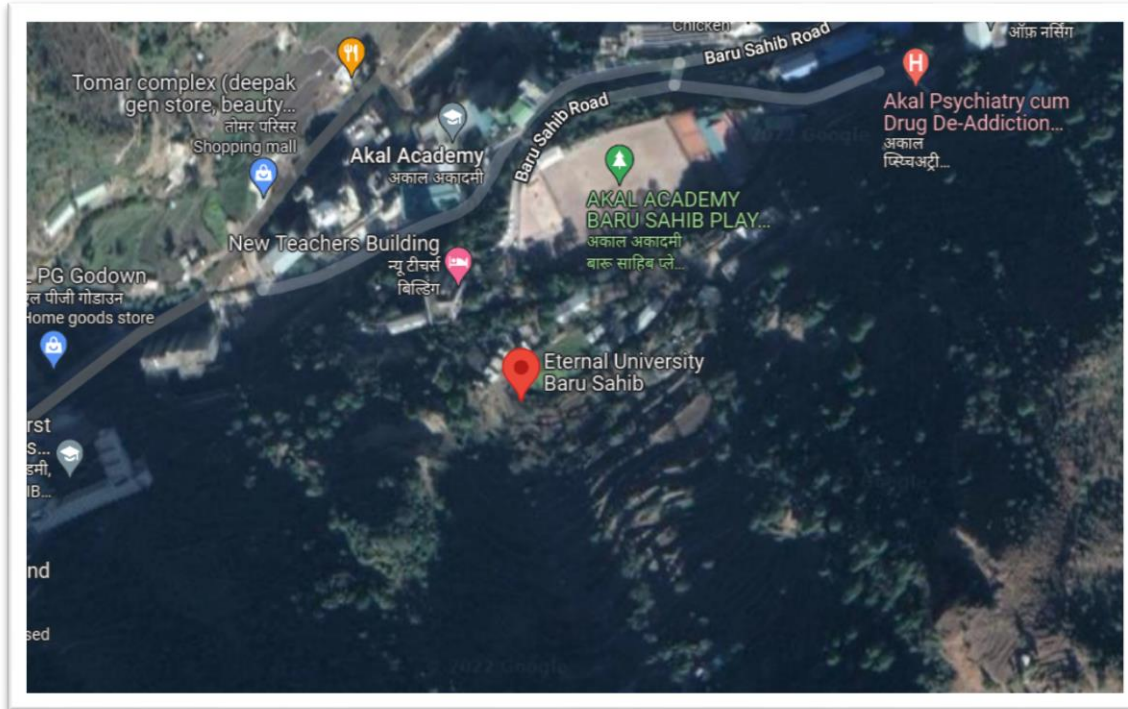
- "To transform and empower young women talent through cutting edge education in science, technology, arts and management amalgamated with spiritual rejuvenation for their holistic development to serve the mankind with compassion and love."



### VISION

- "The relatively young Eternal University with its diverse programmes, priorities, commitments, values and efforts strives to emerge as a world-class women university with its centers of excellence in science, technology, arts and management. Major emphases will be focused on developing and strengthening industrial-institution linkages and harnessing strength of its alumni for skill development, technology transfer, resources generation and employment opportunities. Its graduates engrossed with holistic development, human values, professional ethics and skills and entrepreneurship will adapt and earn comfortable livelihood and serve the mankind with love and devotion for its inclusive and sustainable development as our ambassadors of universal brotherhood for world peace."

## Geo Location



Geo Coordinates from Google maps: 30.753674, 77.296542

## AUDIT PARTICIPANTS

On behalf of University

Name and Designation
<i>Dr. Narinder Pal Singh – Dean Research</i>
<i>Dr. B. S. Sohal - Dean PGS</i>
<i>Dr. S. K Sharma – Dean DKSGACA</i>
<i>Dr. A. S. Ahluwalia – Pro Vive Chancellor</i>
<i>Mr. Santosh Shukla – In-charge AHKS</i>

On behalf of EHS Alliance Services

Name	Position	Qualifications
<i>Dr. Uday Pratap</i>	<i>Lead Auditor</i>	<i>Ph.D. , PDIS, QCI – WASH, EMS Lead Auditor ISO 14001:2015</i>
<i>Pooja Kaushik</i>	<i>Co-Auditor</i>	<i>M.Sc., Field Expert, QCI – WASH</i>



## EXECUTIVE SUMMARY

Green auditing is an essential step to identify and determine whether the institutions practices are sustainable and ecological. Traditionally, we were upright and efficient users of natural resources. But over the period of time, excessive usage of resources like water, electricity, petrol, etc. have become habitual for everyone especially, in urban and semi-urban areas. It is actually the right time to check if we (our process) are consuming more than required resources? Whether we are using resources sensibly?

Green audit standardizes all such practices and provides an efficient way to use natural resources. In the time of climate change and resource exhaustion it is necessary to re-check the processes and convert it in to green and sustainable. Green audit provides an approach for it. It also increases overall awareness among the folks working in institution towards the eco-friendly environment.

This is the first attempt to conduct green audit of this university campus for fulfilment of NAAC criteria. This audit was mainly focused on greening indicators like consumption of energy in terms of electricity and fossil fuel, quality of soil, water usage, vegetation, waste management practices and carbon foot print of the campus. Initially a questionnaire was shared to know about the existing resources of the campus and resource consumption pattern of the students and staffs in the university.

## GREEN AUDIT – ANALYSIS

### GENERAL INFORMATION

#### 1. Does any Green Audit conducted earlier?

*No, This is first time a systematic way of monitoring their environmental eminence initiative taken by University for environment protection.*

#### 2. What is the total strength (people count) of the Institute?

**Students**

Male: 0 Female: 1170 Total: 1170

**Teachers**

Male: 56 Female: 58 Total: 114

**Non-Teaching Staff**

Male: 31 Female: 11 Total: 42

**Total Count**

Male: 87 Female: 1239 Total: 1326

#### 3. What is the total number of working days of your campus in a year?

*There are two hundred sixteen (216) working days in a year.*

#### 4. Where is the campus located?

*The campus is located at Baru Sahib, Distt Sirmaur, near Rajgarh, Himachal Pradesh 173101*

#### 5. Which of the following are available in your institute?

<i>Garden area</i>	<i>Available</i>
<i>Playground</i>	<i>No</i>
<i>Kitchen</i>	<i>Available</i>
<i>Toilets</i>	<i>Available</i>
<i>Garbage Or Waste Store Yard</i>	<i>Available</i>
<i>Laboratory</i>	<i>Yes</i>
<i>Canteen</i>	<i>Available</i>
<i>Hostel Facility</i>	<i>Yes</i>
<i>Guest House</i>	<i>Yes</i>

#### 6. Which of the following are found near your institute?

<i>Municipal dump yard</i>	<i>Not in vicinity of institute</i>
<i>Garbage heap</i>	<i>No Garbage heaps</i>
<i>Public convenience</i>	<i>Public convenience is available</i>
<i>Sewer line</i>	<i>500 m sewer line within campus</i>
<i>Stagnant water</i>	<i>No stagnant water</i>
<i>Open drainage</i>	<i>No</i>
<i>Industry – (Mention the type)</i>	<i>No</i>
<i>Bus / Railway station</i>	<i>Baru Sahib, Bus stand</i>
<i>Market / Shopping complex</i>	<i>No</i>

## WASTE MINIMIZATION AND RECYCLING

### 1. Does your institute generate any waste? If so, what are they?

*Yes, Solid waste Canteen waste, paper, plastic, horticulture, etc.*

### 2. What is the approximate amount of waste generated per day? (in Kilograms/month) (approx.)

*Biodegradable waste - 550 Kg  
Non-biodegradable waste - 700 Kg  
Hazardous Waste - 2 Kg*

### 3. How is the waste generated in the institute managed? By Composting, Recycling, Reusing, Others (specify)

*Reuse of one side printed Paper for internal communication.  
Sewage water is treated by STP with capacity of 1000 KLD.  
Lab waste and medical waste is being treated using ETP of capacity 35 KLD  
Two types of Waste bins are provided at campus for biodegradable and non-biodegradable waste.  
Solid waste is segregated and recycled in waste management plant.  
Composting is done for horticulture waste management.*

#### **4. Do you use recycled paper in institute?**

*Yes, university uses the one sided printed paper.*

#### **5. How would you spread the message of recycling to others in the community?**

*Various campaigns and webinars by Students to increase awareness*

#### **6. Can you achieve zero garbage in your institute? If yes, how?**

*Yes, by using RRR (Reduce, Reuse and Recycle)*

### **GREENING THE CAMPUS**

#### **1. Is there a garden in your institute?**

*Yes, about 392040 Sq. feet areas are developed as Gardens.*

#### **2. Do students spend time in the garden?**

*2-4 Hours during winters*

#### **3. Total number of Plants in Campus?**

*Plant type with approx. count*

<i>Full grown Trees</i>	<i>1656</i>
<i>Small Trees</i>	<i>1261</i>
<i>Hedge Plants</i>	<i>4410</i>
<i>Grass Cover SQM</i>	<i>36421.71 sqm</i>

#### **4. Is the university campus having any Horticulture Department? (If yes, give details)**

*Yes, Total 05 staff deployed in horticulture*

#### **5. How many Tree Plantation Drives organized by campus per annum?**

Annually, around 6 times Tree Plantation Drives are Organized by university. Total 1430 trees and hedge plants planted in this Financial Year with more than 80% survival rate.

## 6. Is there any Plant Distribution Program for Students and Community?

Yes, Saplings are distributed to Students and visitors at various Occasions. Besides this landscape of some area in city are developed by Institute. (photographs attached in annexure 1)

## 8. Is there any Plant Ownership Program?

NA

# WATER AND WASTEWATER MANAGEMENT

## 1. List uses of water in your institute

*Basic use of water in campus:*

**Drinking** – 38.2 KL/month

**Gardening** – 0 KL/month

**Kitchen and Toilets** – 251.8 KL/month

**Others** – 113.9 KL/month

**Hostel** – 3580.2 KL/Month

**Total** = 3984.1 KL/Month

## 2. How does your institute store water? Are there any water saving techniques followed in your institute?

**Storage:** Water is stored in multiple water tanks situated at the roof of building and then it is transferred to different areas of the university to fulfill the water requirement for different purposes.

**Saving Techniques:** Avoid overflow of water controlled valves are provided in water supply system. Close supervision for water supply system.

## 3. Locate the point of entry of water and point of exit of waste water in your institute.

**Point of Entry** - Natural Spring Water

**Point of Exit** –

1. From Canteen, Toilets, bathrooms by covered drainage which is connected to (1000



KLD) STP in campus area.

2. From labs and medicals, to STP (35 KLD)  
And, then, transferred to the Agriculture Farms

#### 4. Write down ways that could reduce the amount of water used in your institute

*Basic ways:*

- Close the taps after usage
- Maintenance and monitoring of valves in supply system to avoid overflow, leakage and spillage
- Water Conservation awareness for new students
- Initiate the installations of water less urinals

## ANIMAL WELFARE

### 1. List the animals (wild and domestic) found on the campus (dogs, cats, squirrels, birds, insects, etc.)

*Birds, Dogs, Cats, Cows and Squirrels are commonly found in campus. A variety of bird's species and other flora and fauna available, so institute doing their bit for its conservation.*

*University has veterinary doctor for animal welfare*

### 2. Does your institute have a Biodiversity Program or a KARUNA CLUB?

*Yes, SDG committee actively organizes awareness through campaigns and poster competition.*

## CARBON FOOTPRINT - EMISSION & ABSORPTION

### 1. Electricity used per year CO2 emission

*(electricity used per year in kWh/1000) x 0.84*

*168111.07 kWh/1000 x 0.84*

*=168111.07/1000x0.84*

*=141.21 tons*

## 2. Per year CO<sub>2</sub> emission from LPG used for cooking in Hostel and Canteen or Mess

*(LPG used per year in kWh/1000) x 0.84*

*165325.49 kWh/1000 x 0.84*

*=165325.49/1000x0.84*

*=138.87 tons*

## 3. Per year CO<sub>2</sub> emission from Diesel used in DG sets as alternate energy source

*(electricity used per year in kWh/1000) x 0.84*

*28811.36kWh/1000 x 0.84*

*=28811.36/1000x0.84*

*=24.20 tons*

## 4. Transportation per year (Bus) CO<sub>2</sub> emission from transportation (Bus)

*(Number of the shuttle bus in our University x total shuttle bus service each day x approximate distance travelled by the vehicle inside the campus in kilometers x 216 /100) x 0.01*

*=5x2x1x216/100x0.01*

*=0.22 tons*

*\*216 working days per year, 0.01 is the coefficient to calculate the emission in metric tons per 100*

## 5. Transportation per year (car) CO<sub>2</sub> emission from transportation (car)

*(Number of cars entering University campus x 2 x approximate distance travelled by the vehicle inside the campus in kilometers x 225/100) x 0.02*

*=10x2x2x216/100x0.02*

*=1.73 tons*

Total CO<sub>2</sub> emission per year cumulative by electricity usage + LPG usages + Diesel usage + bus transportation + car transportation (141.21+138.87+24.20+ 0.22+1.73) = **306.24 tons**

## Carbon absorption by flora in the institution

There are 1656 full grown trees and 1261 semi grown trees of different species, on the campus spread over 45 Bighas.

Carbon absorption capacity of one full grown tree 22 kg CO<sub>2</sub> Therefore Carbon absorption capacity of 1656 full-grown trees  $1656 \times 22 \text{ kg CO}_2 = 36432 \text{ kg of CO}_2 = 36.43 \text{ tons of CO}_2$ .

The carbon absorption capacity of 1261 semi-grown trees is 40% of that of full-grown trees. Hence the carbon absorption  $1261 \times 6.8 \text{ kg of CO}_2 = 8574.80 \text{ kg of CO}_2 = 8.57 \text{ tons of CO}_2$

There are approximately Hedge Plants 4410 of various species being raised in the gardens and grown in the areas where no buildings are built Carbon absorption of bush plants varies widely with their species. Certain bushes absorb very high level of CO<sub>2</sub> where as some others absorb very low level of CO<sub>2</sub>. In the absence of a detailed scientific study, 200g of CO<sub>2</sub> absorption is taken per bush (in consultation with Environmental Science specialists). Based on this, total carbon absorption of bushes is  $4410 \times 200 \text{ g} = 882 \text{ kg} = 0.88 \text{ tons of CO}_2$

The lawns on the campus have buffalo grass, Mexican grass and indigenous grass species and cover a total area of 302040 sq. ft. Carbon absorption capacity of a 10 sq. ft. area of lawn is 1 g per day Therefore, carbon absorption by lawn area  $302040 \times 365 \times 0.1 \text{ g CO}_2 = 14309.46 \text{ kg CO}_2$  per year, Total carbon absorption per year is 14.31 tons of CO<sub>2</sub>.

Grand total of carbon absorption capacity of the campus is 60.20 tons. University is doing their best towards carbon neutrality.

## SOLAR INSTALLATION DETAILS

The Solar Water Heater system at Eternal University comprises of 2 types a) Flat Plate Collector b) Evacuated Tube Collector. The total capacity is 18000 litres per day. There are 3 water tanks connected to the system. The total capacity of Water tanks is 11000 Litres. Heated water is used for the purpose of bathing in the hostel and cooking in the kitchen.

## SOLAR PV SYSTEM 200 KWP

This Solar PV Plant was installed in year 2012 under the subsidy scheme of Ministry of New and Renewable Energy. It was one of the highest Solar PV Installation worked under the scheme. The plant has 800 Solar Plates of size 250 Wp each. 4 Inverters of size 50 kWp each convert the DC electricity into the AC electricity. The produced electricity from the plant is fed into the Distribution system for the electrification inside the buildings.



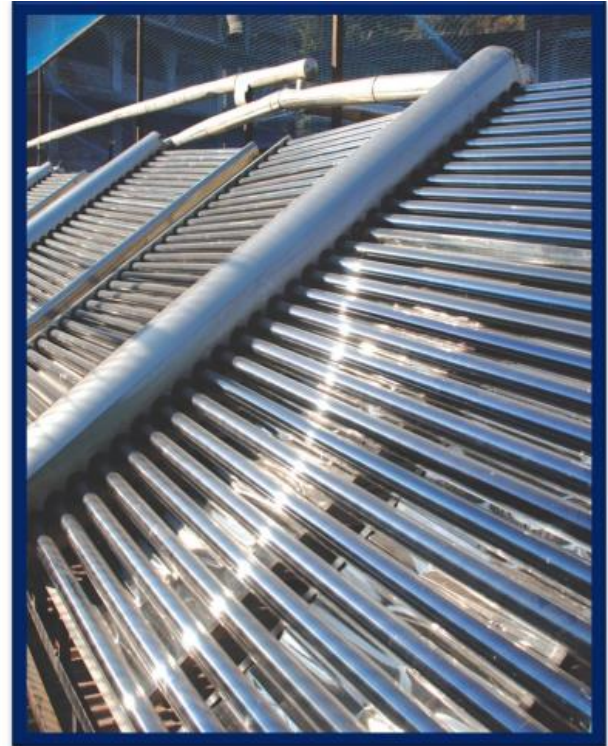
## SOLAR WATER HEATER

The Solar Water Heater system at Eternal University comprises of 2 types

- a) Flat Plate Collector
- b) Evacuated Tube Collector

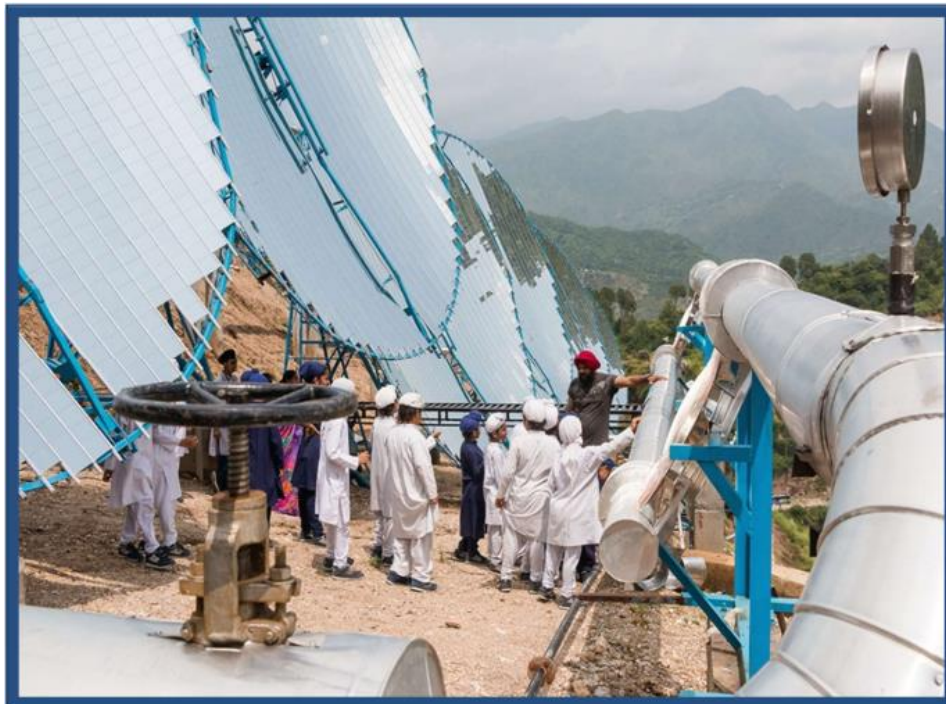
The total capacity is 18000 liters per day. There are 3 water tanks connected to the system. The total capacity of Water tanks is 11000 Liters. Heated water is used for the purpose of bathing in the hostel and cooking in the kitchen.





## CONCENTRATED SOLAR THERMAL SYSTEM (CST)

CST Plants in the Campus is used for the community cooking for 5500 persons. It was one of the largest plant in the North India at the time of Installation in the year 2017. CST plant utilizes the thermic fluid for its operation for the necessary generation of the steam, which is utilized in the cooking. The Net impact of the CST Plant results in saving of 18250 LPG cylinders in a year. Each cylinder being 19 kg, therefore total  $(18250 \times 19) = 346750$  kg of LPG is saved in a year.



## || GREEN INITIATIVES BY CAMPUS

- **Renewable Energy** - Solar power plant of capacity 200 KW is installed on building roof and hills that will supply approx. 50-60% of total power in campus.
- **Biodiversity Conservation** – Flora and fauna conservation program and awareness campaign organised as per the local geography.
- **Tree Plantation Drives** - Six Drives Annually as well as Every Guest is honoured by Tree Plantation at Campus.
- **Air Pollution Reduction** - Personal Vehicles (Students) not allowed at campus and university provides Bicycle in campus area.
- **Traditional Bulb to LED** - University has installed 1060 LED bulbs/ Tube light as replacement of traditional lighting system.
- **Solid Waste Management** -Waste segregation & management using Waste treatment plant, STP & ETP.
- **Environment Committee** – SDG committee/Environment committee is headed by Dr. Pritesh Vyas
- **Recycling The Waste** – University is converting waste plastic into bricks and pots, and they recycle used papers to make file covers.
- **Drip Irrigation Technique** – University garden committee has adopted this technique to save water.

## || RECOMMENDATIONS

- Water Meter should be installed at every building of institute for monitoring of water consumption per capita.
- University should go for water balancing / audit for monitoring the use and wastage of water.
- Increase in display of environment conscious poster/paintings/slogans in the building for spreading awareness amongst students.
- “Save Energy” and “Save Water” Messages should be displayed at various locations to aware the students and staff about energy savings and water savings.
- Eco-friendly parameters should be included in the purchase of articles and goods for the university campus.
- Solar powered street lights and LED display board should be there in university campus
- Reduction in use of paper work by go digital system for teaching and examinations.
- Usage of curtains should be restricted in day time in order to get maximum natural light in classrooms.
- Dishwasher and washing machines should be adopted in mess and hostel to save water.

## Transparency of Green Audit Report

*Green audit report is one of the useful means of demonstrating an organization's commitment to openness and transparency. If an Organisation believes it has nothing to hide from its stakeholders, then it should feel confident enough to make its green audit reports freely available to those who request them. As a basic rule, green audit reports should be made available to all stakeholders.*

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## || CONCLUSION

This audit involved extensive consultation with all the Eternal University team, interactions with key personnel on wide range of issues related to Environmental aspects. Eternal University has SDG Committee for sustainable use of resources. Overall 80% of University campus is for landscaping. The audit has identified several observations for making the campus premise more environment friendly. The recommendations are also mentioned with observations for University campus team to initiate actions. The audit team opines that the overall site is maintained well from environmental perspective. There are no major observations but few things are important to initiate urgently are installation of water meters and water balancing report.

## || REFERENECE:

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

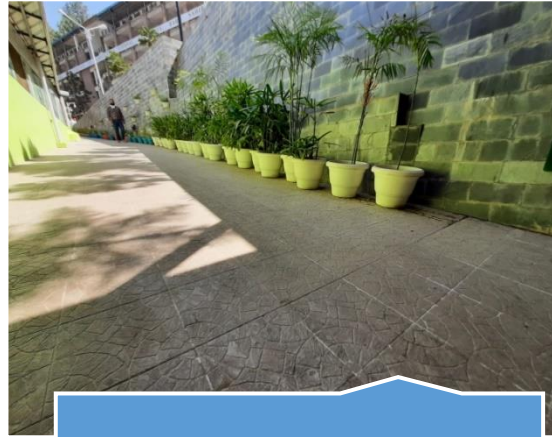




## ANNEXURE – ENVIRONMENT CONSOIOUSNESS PHOTOGRAPHS



Lush Green Campus



Neat and Clean Campus



Air Purifying Plants



Air Purifying Plants



Indoor Plants



Indoor Plants



Seminar on Sustainability



Ozone Day Celebration



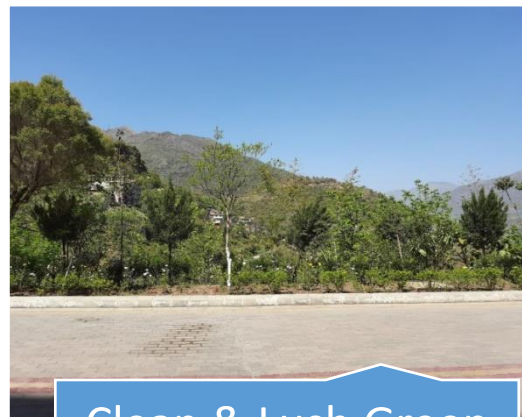
Solar Utility Training to Villegers



Pollution Awareness Campaign



Pavers used in campus



Clean & Lush Green Campus





**Plantation Drive by Students**



**Plantation Drive by Students**



**Drip Irrigation to Save Water**



**Windows as per NBC Guidelines**



**Ventilated Class Rooms**



**Green Building Design**

**\*\*\*\*\* END OF THE REPORT \*\*\*\*\***



ETERNAL UNIVERSITY

# GREEN AUDIT REPORT

2022-2023

PREPARED BY  
EHS ALLIANCE SERVICES



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# AUDIT CERTIFICATE



# CERTIFICATE

PRESENTED TO

## ETERNAL UNIVERSITY

Baru Sahib, Distt. Sirmour, near Rajgarh, Himachal Pradesh 173101

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

## GREEN AUDIT

**ACADEMIC YEAR 2022-23**

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

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



SIGNATURE



29.05.2023  
DATE OF AUDIT

## ACKNOWLEDGMENT

EHS Alliance Services would like to thank the management of Eternal University for assigning this important work of Green Audit. We appreciate the cooperation of the teams for the completion of the assessment.

First of all, we would like to thank ***Prof. (Dr.) Davinder Singh, Hon'ble Vice Chancellor of Eternal University*** for giving us an opportunity to evaluate the environmental performance of the campus.

We are also thankful to

<b>Prof. (Dr.) Amrik Singh Ahluwalia</b>	Honorable Pro-Vice-Chancellor
<b>Prof. (Dr.) B. S. Sohal</b>	Controller of Examination and Dean-PGS
<b>Prof. (Dr.) N. P. Singh</b>	Dean, Research
<b>Prof. (Dr.) Tusshar Mahajan</b>	Professor, Management Department

We would also like to thank ***Dr. Puneet Negi - Assistant Professor and HoD, Physics Department*** for his Continuous Support and guidance, without which the completion of the project would not been possible. We are also thankful to other staff members actively involved in collecting the data and conducting field measurements.



## DISCLAIMER

EHS Alliance Services Audit Team has prepared this report for Eternal University based on input data submitted by the representatives of the University complemented with the best judgment capacity of the expert team.

While all sensible care has been taken in its preparation, details contained in this report have been compiled in good faith based on the information gathered.

It is further informed that the conclusions are arrived following best estimates and no representation, warranty, or undertaking, express or implied is made and no responsibility is accepted by the Audit Team in this report or for any direct or consequential loss arising from any use of the information, statements or forecasts in the report.

If you wish to distribute copies of this report external to your organization, then all pages must be included.

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Signature

**LEAD AUDITOR**



## CONCEPT AND CONTEXT

The National Assessment and Accreditation Council, New Delhi (NAAC) has made it mandatory from the academic year 2019–20 onwards that all Higher Educational Institutions should submit an annual Green, Environment and Energy Audit Report. Green Audit is assigned to the Criteria 7 of NAAC, National Assessment and Accreditation Council which is a self-governing organization of India that declares the institutions as Grade A, Grade B, or Grade C according to the scores assigned at the time of accreditation. Moreover, it is part of the Corporate Social Responsibility of the Higher Educational Institutions to ensure that they contribute towards the reduction of global warming through Carbon Footprint reduction measures.

In view of the NAAC circular regarding green auditing, the University management decided to conduct an external environment assessment study by a competent external professional auditor. The green audit aims to examine environmental practices within and outside the college/university campus, which impact directly or indirectly on the atmosphere. Green audit can be defined as the systematic identification, quantification, recording, reporting, and analysis of components of a university/college environment. It was initiated with the intention of reviewing the efforts within the institutions whose exercises can cause risk to the health of inhabitants and the environment.

Through the green audit, a direction as to how to improve the structure of the environment and the inclusion of several factors that can protect the environment can be commenced. This audit focuses on the Green Campus, Waste Management, Water Management, Air Pollution, Energy Management & Carbon Footprint, etc. being implemented by the institution. The concepts, structure, objectives, methodology, tools of analysis, and objectives of the audit are discussed below.

## INTRODUCTION

Nowadays, educational institutions are becoming more thoughtful towards the environmental aspects, and as a result, new and innovative concepts are being introduced to make them sustainable and eco-friendly. To preserve the environment within the institution, a number of viewpoints applied by several educational institutes to solve their environmental problems such as promotion of the saving energy, waste recycling, water consumption reduction, water harvesting, and many more...

The activities carried out by the institution can also create adverse environmental impacts. The green audit is defined as an official inspection of the effects a University has on the environment. Green Audit is conducted to evaluate the actual scenario at the institution campus. The green audit can be a useful tool for a university/college to determine how and where they are using most of the energy water or resources; the University can then decide how to implement changes and make savings. It can also be used to determine the nature and volume of waste, which can be used for a recycling project or to improve a waste minimization plan.

Green auditing and the application of mitigation measures is a win-win situation for all the institutions, the learners, and Mother Earth. It can also result in health awareness and can promote environmental awareness, values, and beliefs. It provides a better understanding to staff and students about the green impact on the institution. Green auditing also upholds financial savings through the reduction of resource usage. It gives an opportunity to the students and teachers for the development of ownership of personal and social responsibility. The audit process involves primary data collection, and site walk-through with the team of the University/college including the assessment of policies, activities, documents, and records.

## OVERVIEW OF THE UNIVERSITY

Eternal University is NAAC Accredited & ISO 9001: 2015 Certified University established under the Himachal Pradesh Private University (Establishment & Regulation) Act 2006 & Himachal Pradesh Government Act. 3 of 2009, with the right to confer degree as per the UGC public notice on private Universities dated April 18, 2011.



The great visionary of the 20th century (Sant Attar Singh Ji) had a vision that modern scientific education alone will not serve humanity well, until and unless it is amalgamated with Brahm Vidya (Spiritual Education). The graduates of this unique education system will not only be outstanding in academics, but also will have high moral values (i.e. they will have love for humanity, compassion for the weak and the underdog, and a sense of selfless service for the community). These graduates will work towards establishing permanent peace in the world. They will act as Ambassadors of Peace wherever they live, work, and raise their families.

Eternal University with its seven constituent colleges is unique in imparting value-based education to female students and is the first private university of Himachal Pradesh to start the College of Nursing, School of Public Health, and College of Agriculture. Among several previous recognitions, Eternal University has been recently recognized as “The 20th Best Higher Education Institution in India, 2019 which provides a broader perspective and cutting-edge higher education with a focal point on fostering skills and innovation” by EDUCATION BRAINIAC magazine.





In a largely residential campus the day-scholar girl students from nearby areas of Sirmaur district who could commute from home can now also pursue their studies in the Eternal University. This campus is situated in the Valley of Divine Peace, the Modern Gurukul provides the safest, drug and pollution-free environment with facilities such as a sports complex, gymnasium, NSS and NCC units, experimental farms, poly houses, modern dairy complex, solar power utilization systems and support for holistic development of its students. The Eternal University has organized several conferences, workshops, camps and Kisan Melas with an emphasis on addressing the crucial problems of farmers of Sirmour and adjoining districts of Himachal Pradesh for their inclusive development.

The university offers 18 Bachelor programs, 28 Master Programmes, and 22 Doctorate Programmes.

### Bachelor Programs

B.Sc. (Hons) Agriculture	B.Tech. Food Technology	B.Tech. CSE	B.Sc. Information Technology	B.Sc. Non-Medical
B.Sc. (Hon.) Mathematics	B.Sc. (Hons.) Microbiology	B.Sc. (Hons.) Economics	B. Ed	B.Com (Hons.)
B.B.A.	B.A. (Hons.) Music	B.A. Humanities	B.Sc. (Hons.) Psychology	B. Lib
	B.Sc. Medical	B.Tech. CSE Lateral/Migrated	<i>B.Sc. Nursing</i>	

### Master Programs

M.Sc. Agronomy	M.Sc. Ag. Genetics & Plant Breeding	M.Sc. Ag. (Entomology)	M.Sc. Ag. (Horticulture) Vegetable Science	M.Sc. Ag. (Horticulture) Fruit Science
M.Sc. Ag. Horticulture (Floriculture & Landscape Architecture)	M.Sc. Ag. Plant Pathology	M.Sc. Agricultural Economics	M.Sc. Food Science & Technology	M.Tech. Food Technology
M.Tech. CSE	M.Sc. Botany	M.Sc. Chemistry	M.Sc. Mathematics	M.Sc. Microbiology
M.Sc. Physics	M.Sc. Zoology	M.P.H	M.Sc. Economics	M.Com.
Master of Business Administration	M.A. Music	M.A. (Hons.) Punjabi	M.Sc. Psychology	M.A. English
	M.A. Education	M.Sc. Biotechnology	M.Sc. Nursing	



## Doctorate Programs

Ph.D. Biotechnology	Ph.D. Food Technology	Ph.D. CSE	Ph.D. Botany	Ph.D. Chemistry	Ph.D. Microbiology
Ph.D. Mathematics	Ph.D. Physics	Ph.D. Zoology	Ph.D. Economics	Ph.D. Management	Ph.D. English
Ph.D. Music	Ph.D. Public Health	Ph.D. Horticulture(Veg Science)	Ph.D. Agronomy	Ph.D. Entomology	Ph.D. Commerce
Ph.D. Punjabi	Ph.D. Genetics & Plant Breeding	Ph.D. Nursing	Ph.D. Psychology	Ph.D. Education	

## Certificate Courses

Geriatric Care Assistants	Mental Health and Substance Abuse
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## Diploma Courses

P.G. Diploma in Rehabilitation Psychology (PGDRP)
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## Add-On Courses

Library Science	Career Guidance & Counselling
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# VISION | MISSION

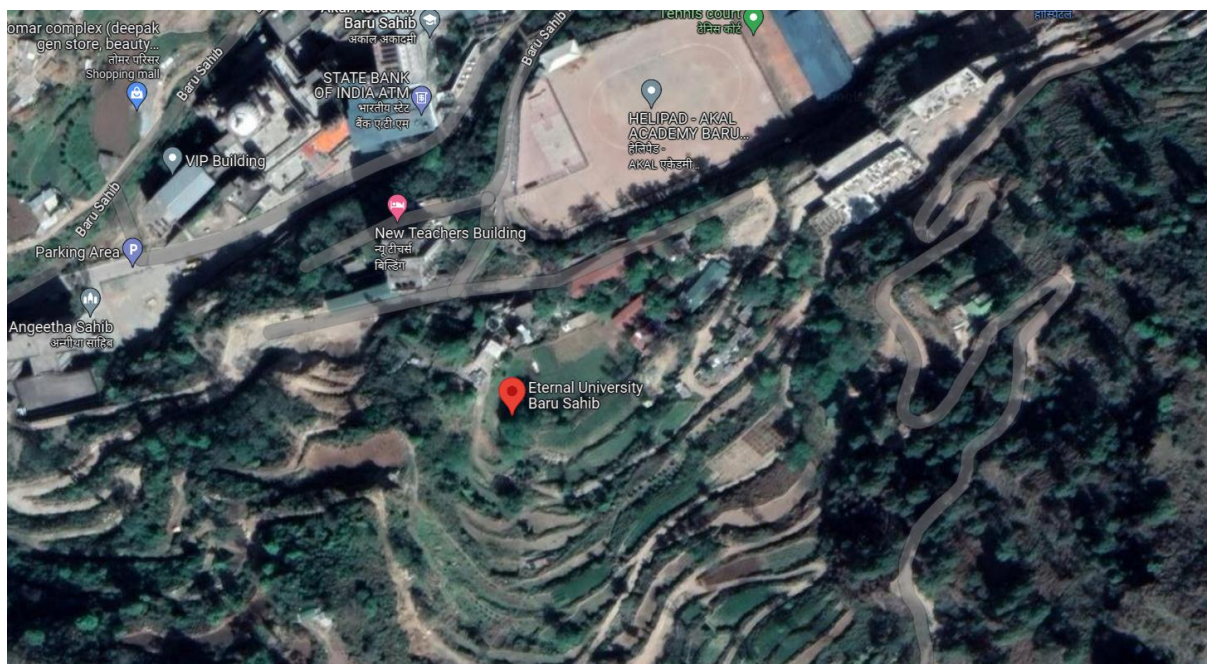
## VISION

The relatively young Eternal University with its diverse programs, priorities, commitments, values, and efforts strives to emerge as a world-class women's university with its centre of excellence in science, technology, arts, and management. Major emphases will be focused on developing and strengthening industrial-institution linkages and harnessing the strength of its alumni for skill development, technology transfer, resource generation, and employment opportunities. Its graduates engrossed with holistic development, human values, professional ethics and skills, and entrepreneurship will adapt and earn comfortable livelihoods and serve mankind with love and devotion for its inclusive and sustainable development as our ambassadors of universal brotherhood for world peace."

## MISSION

To transform and empower young women's talent through cutting-edge education in science, technology, arts, and management amalgamated with spiritual rejuvenation for their holistic development to serve mankind with compassion and love.

## Geo Location



Geo Coordinates from Google Maps: 30.7539376, 77.2970275

## AUDIT PARTICIPANTS

On behalf of the University

Name	Designation
<b>Prof. (Dr.) Davinder Singh</b>	Honorable Vice Chancellor
<b>Prof. (Dr.) Amrik Singh Ahluwalia</b>	Honorable Pro-Vice Chancellor
<b>Prof. (Dr.) B. S. Sohal</b>	Controller of Examination and Dean-PGS
<b>Prof. (Dr.) N. P. Singh</b>	Dean, Research
<b>Prof. (Dr.) Tusshar Mahajan</b>	Professor, Management Department
<b>Dr. Puneet Negi</b>	Assistant Professor and HoD, Physics
<b>Mr. B. S. Kapoor</b>	Accounts Officer
<b>Er. Rajeev Thakur</b>	Assistant Professor, CSE
<b>Mr. Sukhwinder Singh</b>	Transport Manager
<b>Er. Hemant Singh</b>	Electrical Engineer
<b>Mr. Santosh Sukla</b>	Solid Waste Management supervisor
<b>Mr. Manoj</b>	Wastewater treatment supervisor

On behalf of EHS Alliance Services

Name	Position	Qualifications
<b>Dr. Uday Pratap</b>	<i>Lead Auditor</i>	<i>Ph.D., PDIS, QCI – WASH, EMS Lead Auditor ISO 14001:2015</i>
<b>Ms. Pooja Kaushik</b>	<i>Co-Auditor</i>	<i>M.Sc., Field Expert, QCI – WASH</i>

## EXECUTIVE SUMMARY

Green auditing is an essential step to identify and determine whether the institution's practices are sustainable and ecological. Traditionally, we were upright and efficient users of natural resources. But over the period of time, excessive usage of resources like water, electricity, petrol, etc. has become habitual for everyone especially, in urban and semi-urban areas. It is actually the right time to check if we (our process) are consuming more than the required resources? Whether we are using resources sensibly?

Green audit standardizes all such practices and provides an efficient way to use natural resources. In times of climate change and resource exhaustion, it is necessary to re-check the processes and convert them into green and sustainable. Green audit provides an approach for it. It also increases overall awareness among the folks working in the institution towards the eco-friendly environment. This is the second attempt to conduct a green audit of this university campus for the fulfilment of NAAC criteria. This audit was mainly focused on greening indicators like consumption of energy in terms of electricity and fossil fuel, quality of soil, water usage, vegetation, waste management practices, and the carbon footprint of the campus. Initially, a questionnaire was shared to know about the existing resources of the campus and the resource consumption pattern of the students and staff in the university.

# GREEN AUDIT – ANALYSIS

## GENERAL INFORMATION

### 1. Was any Green Audit conducted earlier?

*This is the second time a systematic way of monitoring their environmental eminence initiative taken by the University for environment protection.*

### 2. What is the total strength (people count) of the Institute?

**Students**

Male: 0 Female: 959 Total: 959

**Teachers**

Male: 48 Female: 58 Total: 106

**Non-Teaching Staff**

Male: 19 Female: 7 Total: 26

**Total Count**

Male: 67 Female: 65 Total: 1091

### 3. What is the total number of working days on your campus in a year?

*There are two hundred twenty-two (222) working days in a year.*

### 4. Where is the campus located?

*The campus is located at Baru Sahib, Distt Sirmaur, near Rajgarh, Himachal Pradesh 173101*

### 5. Which of the following are available in your institute?

Garden area	Available
Playground	Available
Kitchen	Available
Toilets	Available
Garbage Or Waste Store Yard	Available
Laboratory	Yes
Canteen	Available
Hostel Facility	Yes
Guest House	Yes

### 6. Which of the following are found near your institute?

Municipal dump yard	Not in the vicinity of the institute
Garbage heap	No Garbage heaps
Public convenience	Public convenience is available
Sewer line	1 km sewer line within the campus
Stagnant water	No stagnant water
Open drainage	No
Industry – (Mention the type)	No
Bus / Railway station	Baru Sahib, Bus stand
Market / Shopping Complex	ARY Shopping Complex

## WASTE MINIMIZATION AND RECYCLING

### 1. Does your institute generate any waste? If so, what are they?

*Yes, Solid waste Canteen waste, paper, plastic, horticulture, etc.*

### 2. What is the approximate amount of waste generated per day? (in Kilograms/month) (approx.)

*Biodegradable waste - 245 Kg  
Non-biodegradable waste - 10 Kg  
Hazardous Waste - 5 Kg  
Others - >1 Kg*

### 3. How is the waste generated in the institute managed? By Composting, Recycling, Reusing, Others (specify)

*Reuse of one side printed Paper for internal communication.  
Sewage water is treated by STP with a capacity of 1000 KLD.  
Lab waste and medical waste are being treated using ETP of capacity 35 KLD  
Two types of Waste bins are provided at the campus for biodegradable and non-biodegradable waste.  
Solid waste is segregated and recycled in a waste management plant.  
Composting is done for horticulture waste management.*

### 4. Do you use recycled paper in the institute?

*Yes, university uses the one-sided printed paper and makes file covers.*

### 5. How would you spread the message of recycling to others in the community?

*Various campaigns and webinars by Students to increase awareness*

### 6. Can you achieve zero garbage in your institute? If yes, how?

*Yes, by using RRR (Reduce, Reuse, and Recycle)*

## GREENING THE CAMPUS

### 1. Is there a garden in your institute?

*Yes, about 392040 sq. feet of areas are developed as Gardens.*

### 2. Do students spend time in the garden?

*2-4 Hours during winters*



### 3. Total number of Plants in Campus?

<i>Plant type with approx. count</i>	
<i>Full grown Trees</i>	<i>1,822</i>
<i>Small Trees</i>	<i>1,387</i>
<i>Hedge Plants</i>	<i>44,10</i>
<i>Grass Cover</i>	<i>3,92,040 SQFT</i>

### 4. Is the university campus having any Horticulture Department? (If yes, give details)

*Yes, Total 10 staff deployed in horticulture*

### 5. How many Tree Plantation Drives are organized by campus per annum?

*Annually, around 6 times Tree Plantation Drives are Organized by the university. A total of 1350 trees and hedge plants were planted in this Financial Year with more than an 80% survival rate.*

### 6. Is there any Plant Distribution Program for Students and Community?

*Yes, Saplings are distributed to Students and visitors at various Occasions. Besides this landscape of some area in the city are developed by the Institute. (Photographs attached in annexure 1)*

### 8. Is there any Plant Ownership Program?

*NA*

## WATER AND WASTEWATER MANAGEMENT

### 1. List uses of water in your institute

*Basic use of water in campus:*

***Drinking*** – 31.61 KL/month

***Gardening*** – 114.41 Kl/month

***Kitchen and Toilets*** – 207.18 KL/month

***Others*** – 91.12 KL/month

***Hostel*** – 2945.70 KL/Month

***Total*** = 3390.03 KL/Month

## 2. How does your institute store water? Are there any water-saving techniques followed in your institute?

*Storage:* Water is stored in multiple water tanks situated on the roof of the building and then it is transferred to different areas of the university to fulfill the water requirement for different purposes.

*Saving Techniques:* Avoid overflow of water-controlled valves provided in the water supply system. Close supervision of the water supply system.

## 3. Locate the point of entry of water and point of exit of wastewater in your institute.

*Point of Entry - Natural Spring Water*

*Point of Exit –*

1. From the Canteen, Toilets, and bathrooms by covered drainage which is connected to (1000 KLD) STP in the campus area.
2. From labs and medicals to STP (35 KLD)  
And, then, transferred to the Agriculture Farms

## 4. Write down ways that could reduce the amount of water used in your institute

*Basic ways:*

- Close the taps after usage
- Maintenance and monitoring of valves in the supply system to avoid overflow, leakage, and spillage
- Water Conservation awareness for new students
- Initiate the installation of waterless urinals

## ANIMAL WELFARE

### 1. List the animals (wild and domestic) found on the campus (dogs, cats, squirrels, birds, insects, etc.)

*Birds, Dogs, Cats, Cows, and Squirrels are commonly found on campus. A variety of bird species and other flora and fauna are available, so the institute doing their bit for its conservation.*

*The university has a veterinary doctor for animal welfare*

### 2. Does your institute have a Biodiversity Program or a KARUNA CLUB?

*Yes, the SDG committee actively organizes awareness through campaigns and poster competitions.*

## CARBON FOOTPRINT - EMISSION & ABSORPTION

### 1. Electricity used per year CO2 emission

*(Electricity used per year in kWh/1000) x 0.84*  
*237776 kWh/1000 x 0.84*  
*=199.73 tons*

### 2. Per year CO2 emission from LPG used for cooking in Hostel and Canteen or Mess

*(LPG used per year in Kgs/1000) x 2.68*  
*21600 Kgs/1000 x 2.68*  
*=57.89 tons*

### 3. Per year CO2 emission from Diesel used in DG sets as an alternate energy source

*(Diesel used per year in Liters/1000) x 2.99*  
*14400/1000 x 2.99*  
*=43.06 tons*

### 4. Transportation per year (Bus) CO2 emission from transportation (Bus)

*(Number of the shuttle bus in our university x total shuttle bus service each day x approximate distance traveled by the vehicle inside the campus in kilometers x 222 /100) x 0.01*

*=5x2x2x222/100x0.01*

*=0.44 tons*

*\*222 working days per year, 0.01 is the coefficient to calculate the emission in metric tons per 100*

### 5. Transportation per year (car) CO2 emission from transportation (car)

*(Number of cars entering the University campus x 2 x approximate distance traveled by the vehicle inside the campus in kilometers x 225/100) x 0.02*

*=10x4x2x222/100x0.02*

*=3.55 tons*

Total CO2 emission per year cumulative by electricity usage + LPG usages + Diesel usage + bus transportation + car transportation (199.73+57.89+43.06+ 0.44+3.55) = **304.67 tons**

## CARBON FOOTPRINT – CO<sub>2</sub> ABSORPTION BY FLORA IN THE INSTITUTION

There are 1822 full grown trees and 1387 semi grown trees of different species, on the campus spread over 45 Bighas.

The carbon absorption capacity of one full-grown tree is 22 kg CO<sub>2</sub>. Therefore Carbon absorption capacity of 1822 full-grown trees is  $1822 \times 22 \text{ kg CO}_2 = 40084 \text{ kg of CO}_2 = 40.08 \text{ tons of CO}_2$ .

The carbon absorption capacity of 1387 semi-grown trees is 40% of that of full-grown trees. Hence the carbon absorption  $1387 \times 6.8 \text{ kg of CO}_2 = 9431.60 \text{ kg of CO}_2 = 9.43 \text{ tons of CO}_2$

There are approximately Hedge Plants 4410 of various species being raised in the gardens and grown in the areas where no buildings are built. Carbon absorption of bush plants varies widely with their species. Certain bushes absorb very high levels of CO<sub>2</sub> whereas some others absorb very low levels of CO<sub>2</sub>. In the absence of a detailed scientific study, 200g of CO<sub>2</sub> absorption is taken per bush (in consultation with Environmental Science specialists). Based on this, total carbon absorption of bushes is  $4410 \times 200 \text{ g} = 882 \text{ kg} = 0.88 \text{ tons of CO}_2$

The lawns on the campus have buffalo grass, Mexican grass, and indigenous grass species and cover a total area of 302040 sq. ft. Carbon absorption capacity of a 10 sq. ft. area of lawn is 1 g per day. Therefore, carbon absorption by lawn area  $302040 \times 365 \times 0.1 \text{ g CO}_2 = 14309.46 \text{ kg CO}_2$  per year, Total carbon absorption per year is 14.31 tons of CO<sub>2</sub>.

There are 45 Bighas Ridge area on the hill that belongs to Eternal University. Considering the climate, rainfall, and type of tree/grass/shrubs in Himachal hills, there is a carbon absorption capacity of 22.50 Tons.

The grand total carbon absorption capacity of the campus is **87.21 tons**. The university is doing its best towards carbon neutrality.

## SOLAR INSTALLATION DETAILS

The Solar Water Heater system at Eternal University comprises of 2 types a) Flat Plate Collector b) Evacuated Tube Collector. The total capacity is 18000 liters per day. There are 3 water tanks connected to the system. The total capacity of Water tanks is 11000 Litres. Heated water is used for the purpose of bathing in the hostel and cooking in the kitchen.



## SOLAR PV SYSTEM 200 KWP

This Solar PV Plant was installed in the year 2012 under the subsidy scheme of the Ministry of New and Renewable Energy. It was one of the highest Solar PV installations worked under the scheme. The plant has 800 Solar Plates of size 250 kWp each. 4 Inverters of size 50 kWp each convert the DC electricity into the AC electricity. The produced electricity from the plant is fed into the Distribution system for the electrification inside the buildings.



## SOLAR WATER HEATER

The Solar Water Heater system at Eternal University comprises 2 types

- a) Flat Plate Collector
- b) Evacuated Tube Collector

The total capacity is 18000 liters per day. There are 3 water tanks connected to the system. The total capacity of Water tanks is 11000 Liters. Heated water is used for the purpose of bathing in the hostel and cooking in the kitchen.



## CONCENTRATED SOLAR THERMAL SYSTEM (CST)

CST Plants on the Campus are used for community cooking for 5500 persons. It was one of the largest plants in North India at the time of Installation in the year 2017. CST plant utilizes the thermic fluid for its operation for the necessary generation of the steam, which is utilized in cooking. The Net impact of the CST Plant results in savings of 18250 LPG cylinders in a year. Each cylinder is 19 kg, therefore total  $(18250 \times 19) = 346750$  kg of LPG is saved in a year.



## GREEN INITIATIVES BY CAMPUS

- **Renewable Energy** - A solar power plant of capacity 200 KW is installed on building roofs and hills that will supply approx. 30-35% of total power on campus.
- **Solar Water Heater** – The University has installed a solar oil/water heater with a capacity of 12,000 Liters, that helps to save electricity or LPG as well as carbon emission.
- **Biodiversity Conservation** – Flora and fauna conservation program and awareness campaign organized as per the local geography.
- **Tree Plantation Drives** - 6 Drives Annually as well and Every Guest is honored by Tree Plantation at Campus.
- **Air Pollution Reduction** - Personal Vehicles (Students) are not allowed at the university campus.
- **Traditional Bulb to LED** - The University has installed 360 LED bulbs/ Tube lights as a replacement of the traditional lighting system.
- **Solid Waste Management** -Waste segregation & management using Waste treatment plant, STP & ETP.
- **Environment Committee** – The SDG committee/Environment committee is headed by Dr. Pritesh Vyas
- **Recycling The Waste** – The University is converting waste plastic into bricks and pots, and they recycle used paper to make file covers.
- **Drip Irrigation Technique** – The University Garden Committee has adopted this technique to save water.

## RECOMMENDATIONS

- Water Meters should be installed at every building of the institute for monitoring of water consumption per capita.
- The university should go for a water balancing/audit to monitor the use and wastage of water.
- Increase in display of environment-conscious posters/paintings/slogans in the building for spreading awareness amongst students.
- Eco-friendly parameters should be included in the purchase of articles and goods for the university campus.
- Reduction in use of paperwork by going digital system for teaching and examinations.
- The usage of curtains should be restricted in the time in order to get maximum natural light in classrooms.
- Dishwashers and washing machines should be adopted in the mess and hostel to save water.

## CONCLUSION

This audit involved extensive consultation with the Eternal University team and interactions with key personnel on a wide range of issues related to Environmental aspects. Eternal University has an SDG Committee for the sustainable use of resources. Overall, 80% of the University campus is for landscaping. The audit has identified several observations for making the campus premises more environmentally friendly. The recommendations are also mentioned with observations for the University campus team to initiate actions. The audit team opines that the overall site is maintained well from an environmental perspective. There are no major observations but a few things are important to initiate urgently are the installation of water meters and the water balancing report.

## REFERENCE:

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





## ANNEXURE – ENVIRONMENT CONSOIOUSNESS PHOTOGRAPHS



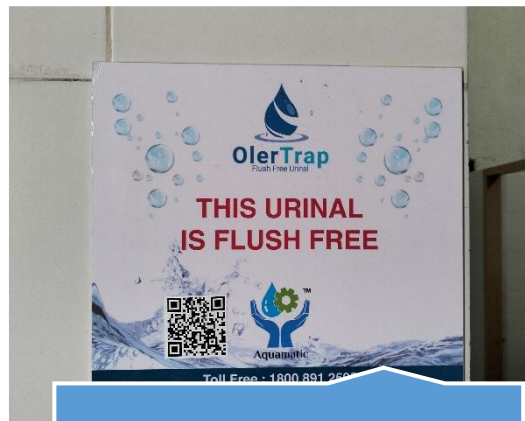
Lush Green Campus



Neat and Clean Campus



Air Purifying Plants



Water Conservation Posters



Sports Ground



Color Coded Dustbins





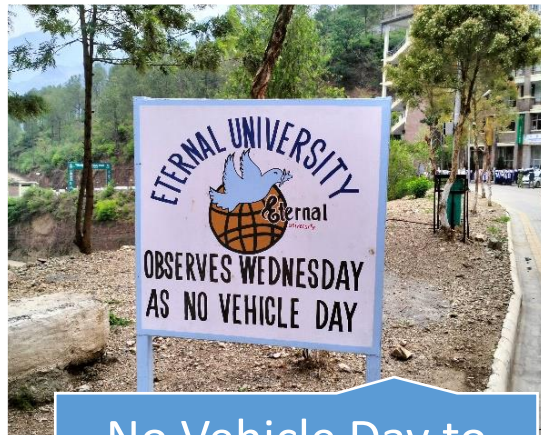
Plantation Drive by Students



Seminar Hall



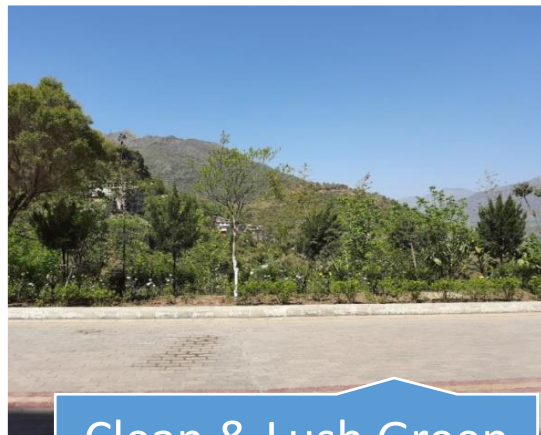
Awareness Posters



No Vehicle Day to Reduce Pollution



Push Taps

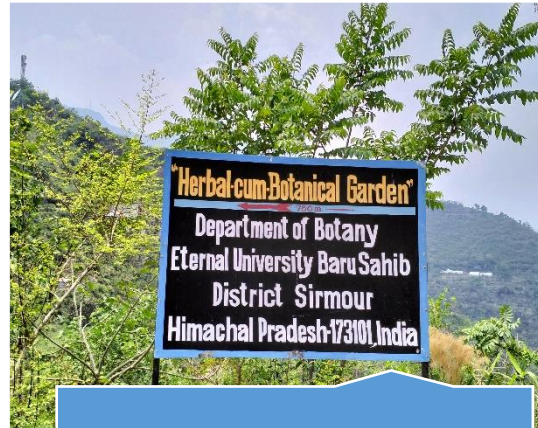


Clean & Lush Green Campus





**Drip Irrigation**



**Herbal Garden**



**Waterless Urinals to Save Water**



**Windows as Per NBC Guidelines**



**Storm Water Drainage**



**Green Building Design**

**SUSTAINABLE INSTITUTIONS OF INDIA  
THE GREEN INSTITUTIONAL RANKINGS 2022**

*Certificate of Excellence*

IN PURSUIT OF EXCELLENCE TOWARDS PRACTICING  
SUSTAINABLE EDUCATION, THIS CERTIFICATE IS AWARDED TO

**Eternal University**

and is ranked No. 46 across India  
in the Green Institutional Rankings 2022.

R  
World Institutional  
RANKING 

  
Executive President

**SUSTAINABLE INSTITUTIONS OF INDIA  
GREEN RANKINGS 2023**

*Certificate of Excellence*

IN PURSUIT OF EXCELLENCE TOWARDS PRACTICING  
SUSTAINABLE EDUCATION, THIS CERTIFICATE IS AWARDED TO

**ETERNAL UNIVERSITY**

Institutional Grade : **A**  
Institutional Band / Category : **Gold**

R  
World Institutional  
RANKING 

  
Executive President

\*\*\*\*\* **END OF THE REPORT** \*\*\*\*\*





# ETERNAL UNIVERSITY

BARU SAHIB, DISTT SIRMAUR, NEAR RAJGARH,  
HIMACHAL PRADESH 173101

# ENVIRONMENT AUDIT REPORT

PREPARED BY  
EHS ALLIANCE SERVICES





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# AUDIT CERTIFICATE



CERTIFICATE NO. EHSAC48B

# CERTIFICATE

PRESENTED TO

## M/S ETERNAL UNIVERSITY

Baru Sahib, Distt Sirmaur, near Rajgarh, Himachal Pradesh, 173101

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

## ENVIRONMENT AUDIT

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

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

SIGNATURE



27.10.2021  
DATE OF AUDIT

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

## ACKNOWLEDGEMENT

EHS Alliance Services would like to thank the management of Eternal University for assigning this important work of Environment Audit. We appreciate the co-operation to the teams for completion of assessment.

We would also like to thank Dr. Narinder Pal Singh, Dean Research (Volunteering) of the University for his Continuous Support and guidance, without which the completion of the project will not be possible. We are also thankful to other staff members who were actively involved while collecting the data and conducting field measurements.

We are also thankful to

*Dr. B.S. Sohal - Dean PGS*

*Dr. A.S. Ahluwalia – Pro VC*

*Dr. S.K Sharma – Dean DKSGACA*

*Mr. Santosh Shukla – Incharge AHKS*

Last but not the least; we would like to thank Dr. Davinder Singh, VC of Eternal University for giving us an opportunity to evaluate the environmental performance of the campus.





## DISCLAIMER

EHS Alliance Services Audit Team has prepared this report for Eternal University based on input data submitted by the representatives of University complemented with the best judgment capacity of the expert team.

While all sensible care has been taken in its preparation, details contained in this report have been compiled in good faith based on information gathered.

It is further informed that the conclusions are arrived following best estimates and no representation, warranty or undertaking, express or implied is made and no responsibility is accepted by Audit Team in this report or for any direct or consequential loss arising from any use of the information, statements or forecasts in the report.

If you wish to distribute copies of this report external to your organisation, then all pages must be included.

EHS Alliance, its staff and agents shall keep confidential all information relating to your organisation and shall not disclose any such information to any third party, except that in the public domain or required by law or relevant accreditation bodies.

EHS Alliance staff, agents and accreditation bodies have signed individual confidentiality undertakings and will only receive confidential information on a 'need to know' basis.

Signature

**LEAD AUDITOR**

## || **CONCEPT AND CONTEXT**

In India, the process for environmental audit was first mentioned under the Environment Protection Act, 1986 by the Ministry of Environment of forests on 13th march, 1992. As per this act, every person owning an industry or performing an operation or process needs a legal consent and must submit an environmental report or statement.

The National Assessment and Accreditation Council, New Delhi (NAAC) has made it mandatory from the academic year 2019–20 onwards that all Higher Educational Institutions should submit an annual Green, Environment and Energy Audit Report. Moreover, it is part of Corporate Social Responsibility of the Higher Educational Institutions to ensure that they contribute towards the sustainable environment.

In view of the NAAC circular regarding environment auditing, the University management decided to conduct an external environment assessment study by a competent external professional auditor.

The term ‘Environmental audit’ means differently to different people. Terms like ‘assessment’, ‘survey’ and ‘review’ are also used to describe similar activities. Furthermore, some organizations believe that an ‘environmental audit’ addresses only environmental matters, whereas others use the term to mean an audit of health, safety and environment-related matters. Although there is no universal definition of Environment Audit, many leading companies/institutions follow the basic philosophy and approach summarized by the broad definition adopted by the International Chambers of Commerce (ICC) in its publication of Environmental Auditing (1989).

The ICC defines Environmental Auditing as:

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

This audit focuses on the environment legal compliances and implementation of rules defined by MoEFCC or state pollution control board. The concepts, structure, objectives, methodology, tools of analysis, and objectives of the audit are discussed below.





## || INTRODUCTION

Nature is very precious gift for all life forms. Disturbance in the nature causes environmental Problems. These are increasing day by day as a result of development of urbanization and industrialization on earth. Because of unplanned utilization of resources, our planet is facing tremendous pressure results a sharp rise in temperature. Therefore, there is an urgent need to plan the consumption of the resources in sustainable manner in order to conserve natural resources for future generation.

Sustainable development is becoming popular in the world for saving the earth. Utilizing resources in judiciously can save the earth's precious resources. Measurement of environmental components is the most effective step to conserve and protect natural resources.

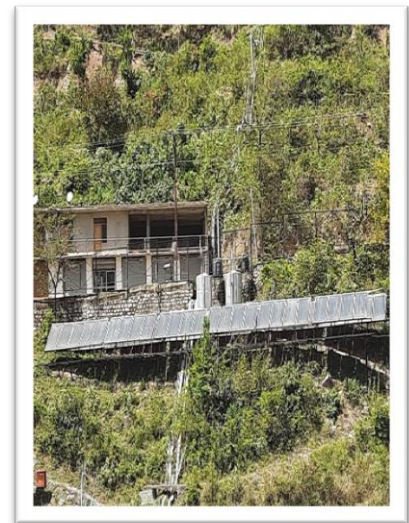
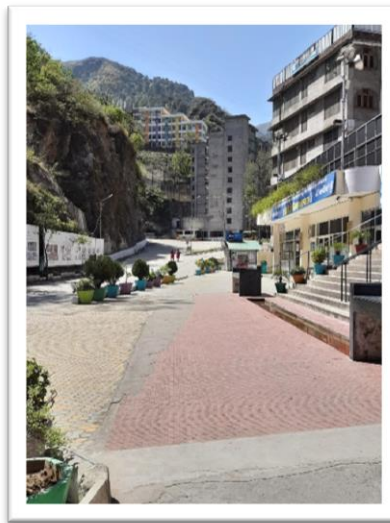
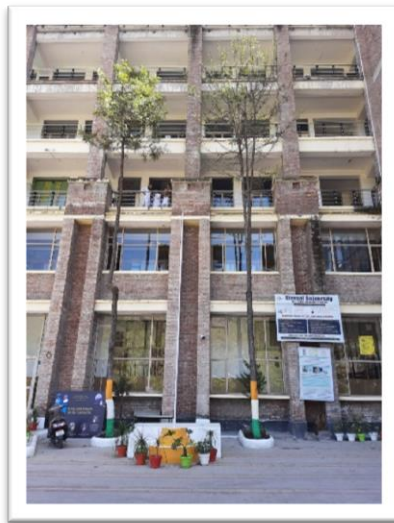
Environmental auditing had begun in the early 1970s with provision of civil lawsuits for non-compliance with environmental regulations. Environment auditing involves on site visit, collection of samples, performing analyses, and report results to competent authorities.

Industry, the corporate world is initiating auditing for saving natural resources. Academic institutions also can contribute to the preservation and conservation of resources within their premises.

In this "Environment Audit" report would help everyone to think about preserving resources, show willingness to learn their importance, adopt steps to minimize resource use and set an example for others to follow the path of eco-friendly practices to achieve the goal of sustainable development. Effective implementation of environmental auditing helps in minimization of environmental risks at low cost.

## || OVERVIEW OF THE UNIVERSITY

Eternal university is NAAC Accredited & ISO 9001: 2015 Certified University established under the Himachal Pradesh Private University (Establishment & Regulation) Act 2006 & Himachal Pradesh Government Act.no. 3 of 2009, with the right to confer degree as per the UGC public notice on private Universities dated April 18, 2011.



The great visionary of 20th century (Sant Attar Singh Ji) had a vision that modern scientific education alone will not serve the humanity well, until and unless it is amalgamated with Brahm Vidya (Spiritual Education). The graduates of this unique education system will not only be outstanding in academics, but also will have high moral values (i.e. they will have love for humanity, compassion for the weak and the underdog, and sense of selfless service for the community). These graduates will work towards establishing permanent peace in the world. They will act as Ambassadors of Peace wherever they live, work and raise their families.

Eternal University with its seven constituent colleges is unique in imparting value based education to girl students and is the first private university of Himachal Pradesh to start College of Nursing, School of Public Health and College of Agriculture. Among several previous recognitions the Eternal University has been recently recognized as "The 20th Best Higher Education Institution in India, 2019 which are providing a broader perspective and cutting edge higher education with a focal point on fostering skills and innovation" by EDUCATION BRAINIAC magazine.



In a largely residential campus the day-scholar girl students from nearby areas of Sirmaur district who could commute from home can now also pursue their studies in the Eternal University. Situated in the Valley of Divine Peace the Modern Gurukul is providing safest, drug and pollution free environment with facilities such as sports complex, gymnasium, NSS and NCC units, experimental farms, poly houses, modern dairy complex, solar power utilization systems and support for holistic development of its students. The Eternal University has organized several conferences, workshops, camps and Kisan Melas with emphasis to address the crucial problems of farmers of Sirmour and adjoining districts of Himachal Pradesh for their inclusive development.

University offers 17 Bachelor programmes, 27 Master Programmes and 19 Doctorate Programmes.

Bachelor Programme	Masters Programme	Doctorate Programme
B.Sc. (Hons) Agriculture	M.Sc. Biotechnology	Ph.D. Biotechnology
B.Tech. Food Technology	M.Sc. Agronomy	Ph.D. Food Technology
B.Tech. CSE	M.Sc. Ag. Genetics & Plant Breeding	Ph.D. CSE
B.Sc. Information Technology	M.Sc. Ag. (Entomology)	Ph.D. Botany
B.Sc. Non-Medical	M.Sc. Ag. (Horticulture) Vegetable Science	Ph.D. Chemistry
B.Sc. (Hon.) Mathematics	M.Sc. Ag. (Horticulture) Fruit Science	Ph.D. Microbiology
B.Sc. (Hons.) Microbiology	M.Sc. Ag. Horticulture (Floriculture & Landscape Architecture)	Ph.D. Mathematics
B.Sc. (Hons.) Economics	M.Sc. Ag. Plant Pathology	Ph.D. Physics
B. Ed		Ph.D. Zoology
B.Com (Hons.)		Ph.D. Economics
B.B.A.New		Ph.D. Management
B.A. (Hons.) Music		Ph.D. English
		Ph.D. Music

<p>B.A. Humanities          B.Sc. (Hons.) Psychology          B. Lib          B.Sc. Medical          B.Tech. CSE          Lateral/Migrated</p>	<p>M.Sc. Agricultural Economics          M.Sc. Food Science &amp; Technology          M.Tech. Food Technology          M.Tech. CSE          M.Sc. Botany          M.Sc. Chemistry          M.Sc. Mathematics          M.Sc. Microbiology          M.Sc. Physics          M.Sc. Zoology          M.P.H          M.Sc. Economics          M.Com.          Master of Business Administration          M.A. Music          M.A. (Hons.) Punjabi          M.Sc. Psychology          M.A. English          M.A. Education</p>	<p>Ph.D. Public Health          Ph.D. Horticulture(Veg Science)          Ph.D. Agronomy          Ph.D. Entomology          Ph.D. Commerce          Ph.D. Punjabi</p>
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## MISSION

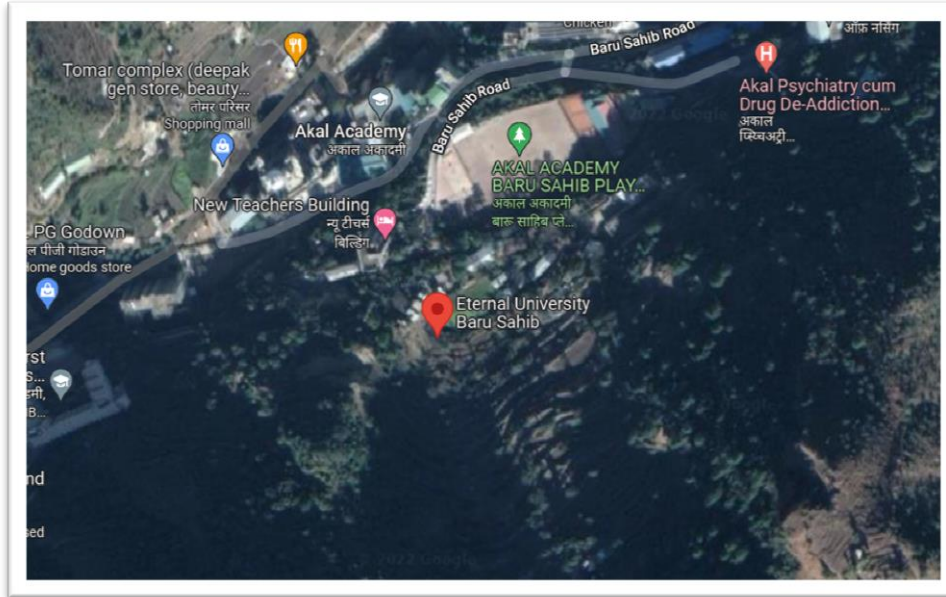
- "To transform and empower young women talent through cutting edge education in science, technology, arts and management amalgamated with spiritual rejuvenation for their holistic development to serve the mankind with compassion and love."

## VISION

- "The relatively young Eternal University with its diverse programmes, priorities, commitments, values and efforts strives to emerge as a world-class women university with its centers of excellence in science, technology, arts and management. Major emphases will be focused on developing and strengthening industrial-institution linkages and harnessing strength of its alumni for skill development, technology transfer, resources generation and employment opportunities. Its graduates engrossed with holistic development, human values, professional ethics and skills and entrepreneurship will adapt and earn comfortable livelihood and serve the mankind with love and devotion for its inclusive and sustainable development as our ambassadors of universal brotherhood for world peace."



### Geo Location



Geo Coordinates from Google maps: 30.753674, 77.296542

## AUDIT PARTICIPANTS

On behalf of University

Name and Designation
<i>Dr. Narinder Pal Singh – Dean Research</i>
<i>Dr. B.S. Sohal - Dean PGS</i>
<i>Dr. S.K Sharma – Dean DKSGACA</i>
<i>Dr. A.S. Ahluwalia – Pro VC</i>
<i>Mr. Santosh Shukla – Incharge AHKS</i>

On behalf of EHS Alliance Services

Name	Position	Qualifications
<i>Dr. Uday Pratap</i>	<i>Lead Auditor</i>	<i>Ph.D. , PDIS, QCI – WASH, Lead Auditor ISO 14001:2015</i>
<i>Pooja Kaushik</i>	<i>Co-Auditor</i>	<i>M.Sc, Field Expert, QCI – WASH</i>

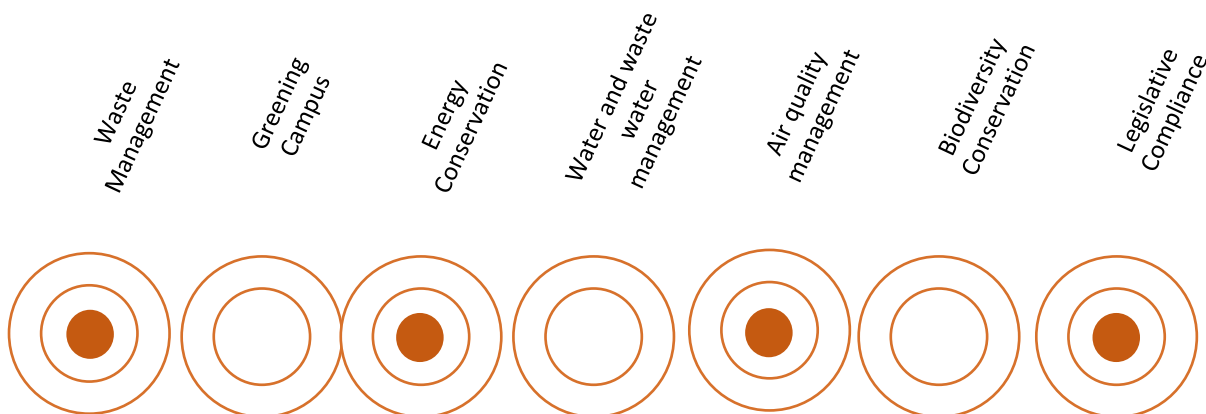


## EXECUTIVE SUMMARY

The environment audit is a snapshot in time, in which one assesses campus performance in complying with applicable environmental laws and regulations. Though a helpful benchmark, the audit almost immediately becomes out-dated unless there is some mechanism in place to continue the effort of monitoring environmental compliance. Our approach to promote a Green Campus to inculcate the sustainable value systems among the students, so that they carry the learning and practices them in their future endeavours. This will ensure that Sustainability and Environmental practices get embedded in all the institutions and organizations in the country.

A Green Campus is a place where environmentally friendly practices and education combine to promote sustainability in the campus which ultimately offers an institution the opportunity to take the lead in redefining its environmental culture and developing new paradigms by creating sustainable solutions to environmental, social and economic needs of the mankind.

This is very first environment audit of University for doing their bit towards environmental protection and environmental awareness at local and global front. Audit criterion is environmental cognizance, waste minimization and management, biodiversity conservation, water conservation, energy conservation and environmental legislative compliance by the campus. A questionnaire is used during audit. This audit report contains observations and recommendations for improvement of environmental consciousness.



# WASTE MANAGEMENT

## TYPES OF WASTE ON UNIVERSITY CAMPUS

To create effective waste management plans, university first need to know the types of waste they produce. Below, we have compiled a list of various kinds of waste commonly generated on institutional campus:

1. **Food Waste** - University campus generates food waste. The average mess and canteen generates approximately 10 kg of food waste a day. The reasons for food waste on an educational campus may be over purchasing food to ensure a sufficient supply and then throwing it away, especially in all hostel messes where plentiful stores are essential. And in the cafeteria or hostel mess, students may pile food onto their ample trays, find it unappealing once they sit down and dutifully scrape it into the garbage. Immediate attention is given to the food waste minimization techniques.
2. **Recyclable Paper, Cardboard, Plastic, Glass and Cans** -Campus tends to produce vast quantities of these recyclables. Even in the digital age, many students, professors and staff members still prefer handwritten notes and end up with piles of unwanted paper once their courses and projects are complete. The snacks so essential to late-night studying or socializing tend to come in recyclable plastic, glass or aluminium containers. And shipments of necessary items throughout the year are likely to arrive in recyclable plastic and cardboard packaging. Quantitative analysis should be carried out to reduce waste in coming academic sessions.
3. **Student Clothes and Housewares** - As we have mentioned above, many students find it more convenient to throw away their clothes and dorm furnishings at the end of the year than donate or recycle them. University should adopt a donation camp in summer and winter season to help needful people.
4. **E – Waste - Student and facility electronics often form a large portion of a campus’s waste** — As campus continually upgrade their computing facilities and office computers to keep up with the latest technology, the old computers have to go somewhere. So do old printers, phones, copy machines and other electronics that receive upgrades over the years. Discarded student electronics often become part of a university’s waste stream as well. Students may throw away old phones, TVs, tablets, laptops and printers, along with cords and other accessories. Recycling is a much more eco-friendly option — the metals in old electronics often have a high reuse value. University has tie-up with external authorised agency details mentioned in legislation compliances.
5. **Chemical Waste** - Chemical waste on a university campus may come from numerous sources. Campus laboratories generate waste chemicals, as do cleaning services. The detergents used in campus laundry rooms eventually become waste as well. Much of these chemical substances

are hazardous waste under Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 and must undergo specific disposal processes according to state environmental rules and regulations.

6. **Maintenance Waste** - In the maintenance department, spent paints, solvents, adhesives and lubricants all form potentially hazardous waste. Because they are difficult to recycle, spent incandescent light bulbs usually become landfill waste. Spent fluorescent light bulbs, which contain small amounts of mercury, typically require special handling because of the environmental and health risks they pose.
7. **Biological Waste** - Biological waste from laboratories and campus medical centres will require special handling and disposal as per BMW Rules, 2016. Tissue from biology and cadaver labs forms biological waste, as do tissue samples, contaminated bandages and used sharps from medical facilities.
8. **Furniture** - Furniture waste on a university campus has a couple different sources. The campus itself may also get rid of old furniture as it modernizes its classrooms, cafeterias, computer labs and study spaces. Annually sold to junk dealer.
9. **Books/Magazines/Newspapers** - Books accounted for solid waste generation and university often generate tons of textbook waste. As courses upgrade to new editions, they may end up throwing their newly obsolete textbooks into the garbage if donation programs cannot use them. Students, too, may find it more convenient merely to throw away their books at the end of the year rather than donating or reselling them.
10. **C & D Waste** - Due to expansion of university campus building and renovation works result significant amount of construction and demolition waste that should be either used for back filling or disposed off through authorised dumping site by CPCB/SPCB.
11. **Municipal Solid Waste** - The University is managing solid waste by its own through waste treatment plant that has competent & trained personnel.
12. **Horticulture Waste** – University campus has lavish greenery and grounds that results significant horticulture waste which is managed by in-house composting system.

# ENERGY CONSERVATION

**1. List ten ways that you use energy in your institute. (Electricity, LPG, firewood, others). Using this list, try to think of ways that you could use less energy every day.**

- *Electricity saves by use of LED bulbs for illumination*
- *LPG saves by use of Pressure cookers for cooking food.*
- *Solar heaters usage in kitchens and hostels*
- *200 kW Solar power plant installed, to save Grid electricity*

**2. Are there any energy saving methods employed in your institute? If yes, please specify. If no, suggest some**

*Yes, Renewable source of energy through 200 KVA solar panel is operational*

**3. How many CFL/LED bulbs has your institute installed?**

*40 % of Total Conventional bulbs and tube lights are replaced by LED/CFL Lights.*

**4. Do you run “switch off” drills at institute?**

*Yes*

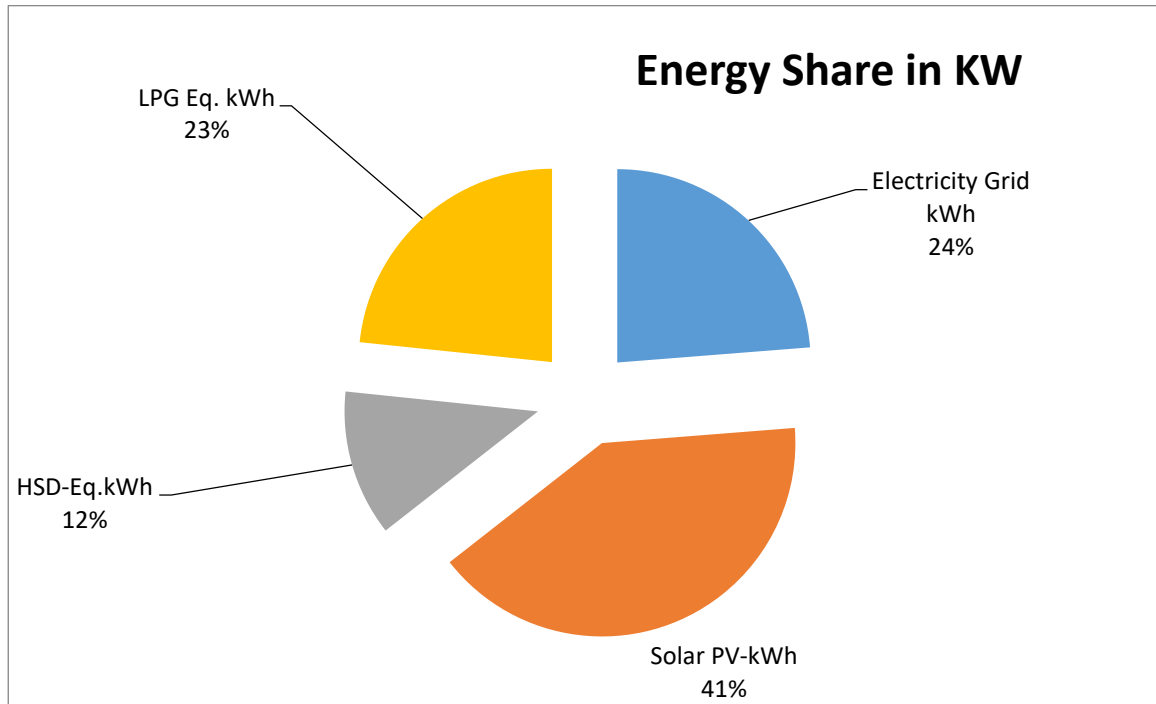
**5. Are your computers and other equipment’s put on power-saving mode?**

*Yes, In Practice*

**6. Does your machinery (TV, AC, Computer, weighing balance, printers, etc.) run on standby modes most of the time? If yes, how many hours?**

*Yes, approx. 6 hours*

Energy Share	kWh	Percentage
<b>Electricity Grid kWh</b>	168,111.07	23.75%
<b>Solar PV-kWh</b>	288,000.00	40.69%
<b>HSD-Eq.kWh</b>	86,434.07	12.21%
<b>LPG Eq. kWh</b>	165,325.49	23.36%
<b>Total -kWh</b>	<b>707,870.62</b>	<b>100%</b>



## WATER AND WASTE- WATER MANAGEMENT

### 1. List uses of water in your institute

*Basic use of water in campus:*

*Drinking – 38.2 KL/month*

*Gardening – 0 KL/month (STP Treated water is being used for gardening)*

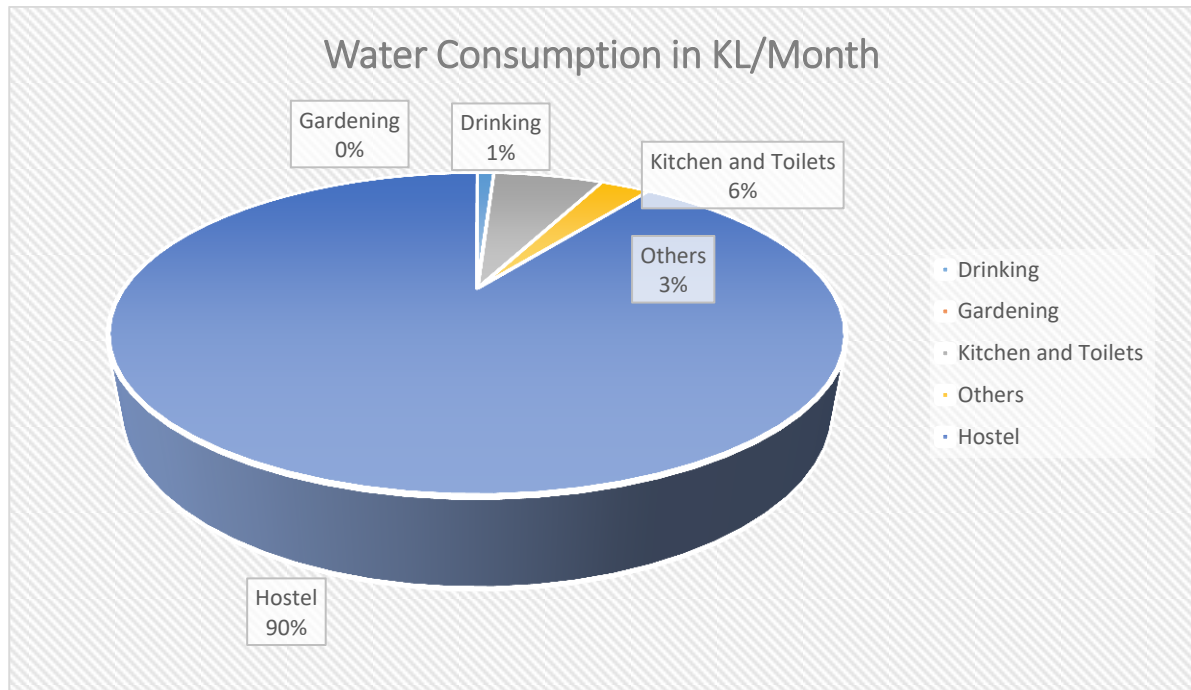
*Kitchen and Toilets – 251.8 KL/month*

*Others – 113.9 KL/month*

*Hostel – 3580.2 KL/Month*

*Total = 3984.1 KL/Month*





## 2. How does your institute store water? Are there any water saving techniques followed in your institute?

**Storage:** Water is stored in multiple water tanks situated at the roof of building and then it is transferred to different areas of the university to fulfill the water requirement for different purposes.

**Saving Techniques:** Avoid overflow of water controlled valves are provided in water supply system. Close supervision for water supply system. Avoid overflow of water controlled valves are provided in water supply system. Close supervision for water supply system.

## 3. Locate the point of entry of water and point of exit of waste water in your institute. (Entry and Exit)

*Point of Entry - Natural Spring Water*

*Point of Exit –*

1. From Canteen, Toilets, bathrooms by covered drainage which is connected to (1000 KLD) STP in campus area.

2. From labs and medicals, to STP (35 KLD)  
And, then, provided to Agriculture Farms

#### 4. Write down ways that could reduce the amount of water used in your institute

Basic ways:

- Close the taps after usage
- Maintenance and monitoring of valves in supply system to avoid overflow, leakage and spillage
- Water Conservation awareness for new students
- Initiate the installations of water less urinals

#### 5. Does your institute harvest rainwater?

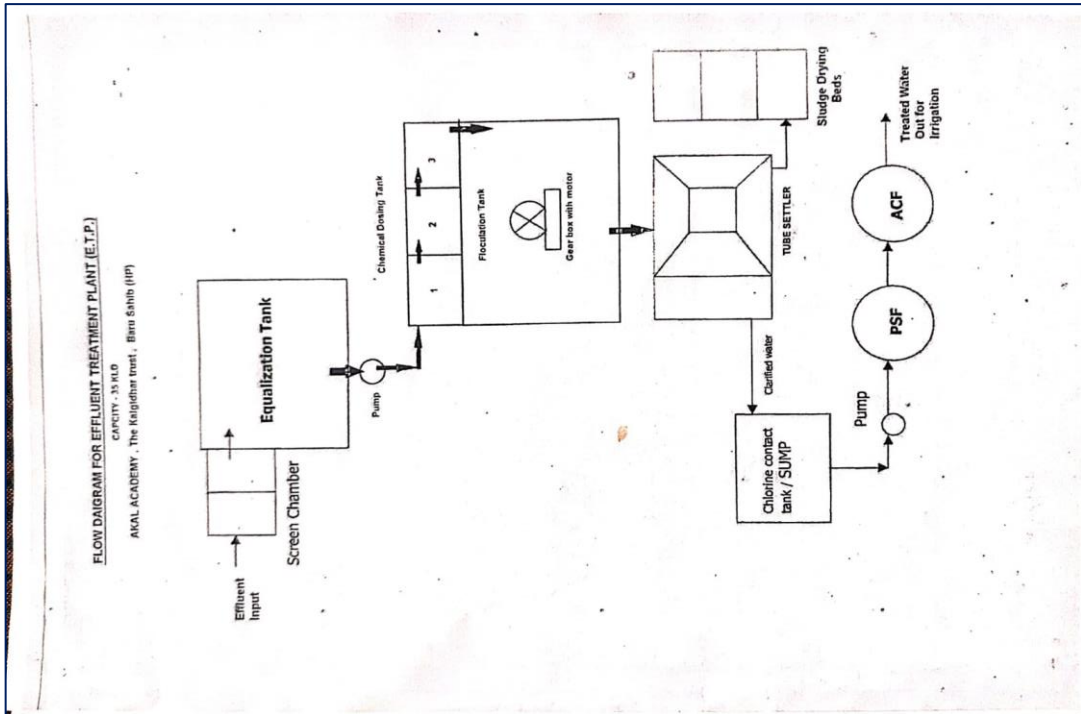
No

#### 6. Is there any water recycling System?

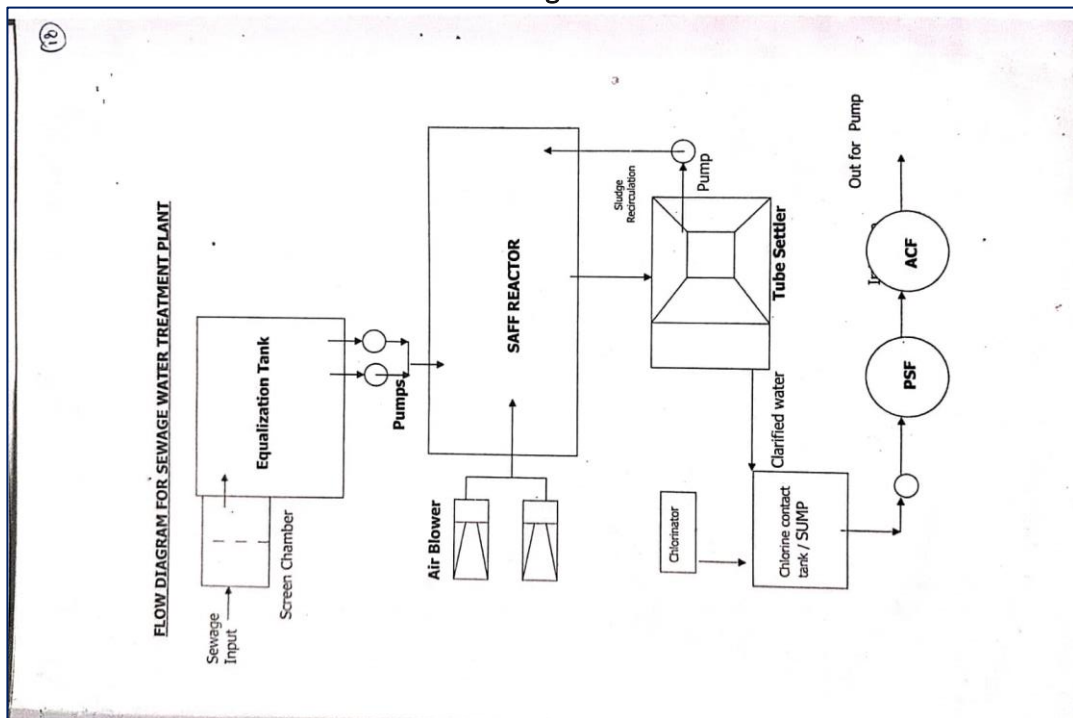
STP – 1000 KLD  
ETP – 35 KLD

Zero liquid discharge (ZLD) is a strategic wastewater management system that ensures that there will be no discharge of industrial wastewater into the environment. It is achieved by treating wastewater through recycling and then recovery and reuse for flushing, gardening, Dg cooling and housekeeping purpose. 1000 KLD STP and 35 KLD ETP are for hospital installed and functional in Campus as per Environment Clearance from State Pollution Control Board dated.

Below are the flowchart diagrams for ETP and STP plant in Eternal University.



The flow diagram of ETP



The flow diagram of STP

## AIR QUALITY MANAGEMENT

### 1. Are the Rooms in Campus are Well Ventilated?

*Yes, as per National Building Code, guidelines*

### 2. Window Floor ratio of the Rooms?

*Very Good, ample daylight utilization*

### 3. What is the ownership of the vehicles used by your campus?

*University and Personal owned vehicles only*

### 4. Provide details of university-owned vehicles?

*Details of the vehicles are as follows*

*Bus – 5*

*Cars – 6*

*Vans – 2*

*Others – 2*

*Total – 15*

### 5. PUC done?

*Yes*

### 6. Specify the type of fuel used by your campus's vehicles

*All vehicles use diesel. There are no Petrol or CNG vehicles in the campus.*

### 7. Air Quality Monitoring Program (If, Any)

*Yes, with university equipment.*

## ENVIRONMENT LEGISLATIVE COMPLIANCE

### 1. Are you aware of any environmental Laws Pertaining to different aspects of environmental management?

*Yes, faculty members and administrative team is well aware of national environmental laws.*

### 2. Does your institute have any rules to protect the environment? List possible rules you could include.

*Yes, innovative initiatives are being taken by campus to reduce pollution and go green.*

### 3. Does Environmental Ambient Air Quality Monitoring conducted by the Institute?

*Yes*

### 4. Does Environmental Water and Waste water Quality monitoring conducted by the Institute?

*No*

### 5. Does stack monitoring of DG sets conducted by the Institute?

*Yes, by NABL approved Laboratory.*

### 6. Is any warning notice, letter issued by state government bodies?

*No*

### 7. Does any Hazardous waste generated by the Institute?

*Yes, BMW is managed by ETP*



## || GENERAL

### 1. Does your institute have any rules to protect the environment? List possible rules you could include.

*Yes, SDG committee takes decisions for environment protection in campus, for example – reuse of waste plastic into bricks and pots, making file covers from used papers, etc.*

### 2. Are students and faculties aware of environmental cleanliness ways? If Yes Explain

*Yes, Periodically pollution reduction, plantation, energy conservation awareness campaigns carried out by institute*

### 3. Does Important Days Like World Environment Day, Earth Day, and Ozone Day etc. eminent in Campus?

*Yes, Earth Day, Ozone day, World Environment Day, and more are celebrated by campus.*

### 4. Does Institute participate in National and Local Environmental Protection Movement?

*Yes, Swatch Bharat Abhiyan by students at campus*

### 5. Does Institute have any Recognition or certification for environment friendliness?

*Yes, Earth Day, Ozone day, World Environment Day, and more are celebrated by campus.*

### 6. Does Institute participate in National and Local Environmental Protection Movement?

*Yes, for e waste management recognition certificate (copy attached)*

## 7. Does Institution conduct a green or environmental audit of its campus?

*This is the first external audit carried out by the university.*

## 8. Has the institution been audited /accredited by any other agency such as NABL, NABET, TQPM, NAAC etc.?

*Yes, periodically audited by such agencies for continual improvement. (Please provide certificates of NABL)*

# RECOMMENDATIONS

- Green building guidelines with ECBC compliance should be adopted for future expansion projects/ buildings of the university.
- Provide sanitary waste disposal facility as per the CPCB guidelines for management of sanitary waste (as per Solid Waste Management Rules, 2016). Installation of Incinerator is recommended in campus
- Environmental Monitoring i.e. (Ambient Air Quality monitoring, Stack Monitoring of DG sets, Water monitoring need to be conducted by State Pollution Control Committee, approved laboratory)
- An environmental policy document should be displayed in campus with all the recommendations and current practice carried by Eternal University.
- Environmental parameters should be included in purchase policy to achieve cradle to grave approach for sustainability.

## || CONCLUSION

This audit involved extensive consultation with all the campus team, interactions with key personnel on wide range of issues related to environmental aspects. Overall 80% of University campus is for landscaping. The audit has identified some observations for making the campus premise more environment friendly. The recommendations are also mentioned with observations for University campus team to initiate actions. The audit team opines that the overall site is well-maintained from environmental perspective. Still there are few things that are important to initiate urgently which includes installation of incinerator, air quality monitoring and periodic inspection of buildings to increase the energy efficiency.

## || REFERENCES

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

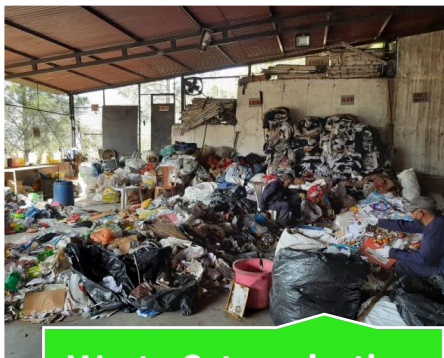
## ANNEXURE PHOTOGRAPHS – WASTE MANAGEMENT AND RECYCLING



Plastic Waste Recycling  
to Flower Pots



Plastic Waste recycling  
to Sand Bricks



Waste Categorization  
and Recycling



Vermi Coposting in  
Campus



Colour Coded Dust  
Bins in Campus



Paper Waste Recycling

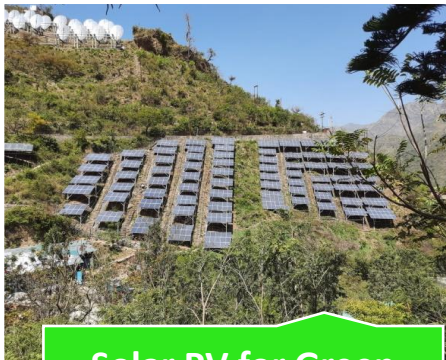




Solar PV



Solar Heaters



Solar PV for Green Energy



Solar PV 200 KW



Public Common Transport



Environment Concious Posters in Campus

## MOU FOR E-WASTE MANAGEMENT

**SHIVALIK SOLID WASTE MANAGEMENT LTD. (Unit-II)**  
CIN:U33130HP2005PLC028806  
FORM 6 (See Rule 19)  
**E- WASTE MANIFEST 641**


1. Sender's Name and mailing address (including Phone No. and e-mail) Mr. Jankesh Chakla 2804021021	Eternal University Batu Solid Via Rajgadh Distt. Solan (HP) Phone No. e-mail
2. Sender's Authorization No. (if applicable)	
3. Manifest Document No.	641
4. Transporter's name and address (including Phone No. and e-mail)	Shivalik Solid Waste Management Ltd. (Unit II) Village Sabbowal, P.O & Tehsil Nalagarh, Distt Solan (HP)
5. Type of Vehicle	(Truck / Tanker/ Special Vehicle)
6. Transporter's registration no.	N-021/08
7. Vehicle registration no.	HP16 - 5863
8. Receiver's Name and address	Shivalik Solid Waste Management Ltd. (Unit II) Village Sabbowal, P.O & Tehsil Nalagarh, Distt Solan (HP)
9. Receiver's Authorization No. (if applicable)	N-001/12
10. Description of E-Waste (Item, Weight/ Numbers) E-waste Cat. No. TEW3 Qty = 2 kg	E-Waste - (Computer, Laptop etc) Spare part
11. Name and stamp of Sender* (Manufacturer or Producer or Bulk Consumer or Collection Centre or Refurbisher or Dismantler) Name and stamp : Mr. Jankesh Chakla Signature : [Signature] Day Month Year 24 - 01 - 2020	
12. Transporter acknowledgement of receipt of E-Wastes Name and stamp : Shivalik Solid Waste Management Ltd. (Unit-II) works: Vill. Sabbowal, P.O. & Teh. Nalagarh, Distt. Solan Himachal Pradesh-174101 Signature : [Signature] Day Month Year 24 - 01 - 2020	
13. Receiver* (Collection Centre or Refurbisher or Dismantler or recycler) certification of receipt of E-Waste Name and stamp : Signature: Day Month Year	

\*= As applicable



## Bio-Hazardous Waste Management System/ MoU

**BIO-MEDICAL WASTE  
(MANAGEMENT & HANDLING)  
RULES 2016  
FORM IV (See Rule 13)  
ANNUAL REPORT**



**AKAL CHARITABLE HOSPITAL,  
Baru Sahib Kheri,  
Kheri - 173101, DIST : Sirmour, TAL : Rajgarh  
Tele No: ,Mobile No: 9816400503**

---

1. Person Incharge : **DR.DAVINDER SINGH** **BMW Id : 360047  
Year : 2016**

2. Activities for Which authorisation is sought : DIS-Disposal,GEN-Generation,RCP-Reception,STO-Storage,TRT-Treatment

3. Authorization Details : RENEWAL - BMW-300581-31/03/2017

4. (i) Address of the institution handling bio-medical wastes : AKAL CHARITABLE HOSPITAL,  
Baru Sahib Kheri,  
Kheri - 173101, DIST : Sirmour, TAL : Rajgarh

(ii) Address of the place of the Treatment facility : ,  
,  
, DIST : , Mobile :

(iii) Address of Wastes Disposal : Same As Above, CBWTF No:--, Valid UpTo:

5. Infrastructure Details :

No. of Beds	No. of Samples	OPD / Day	Occupancy (%)
220	40	150	30

6 (i) Transportation mode BMW Waste: -

(ii) Mode(s) of treatment : ACT-Autoclaving,Chemical Treatment,INC-Incineration,IND-Incineration,Needle Cutter, Disinfection

7. Brief description of method of treatment and disposal : DBR-Deep Burial,OWN-OWN,CYC-Sent For Recycling

8. Specialization : HOS-General Hospital

9. Category (See Schedule-I) of waste and Quantity of waste (KGs) to be generated this Year

HUMAN	ANIMAL	SOILE	EXPIRED	CSW	CLW	DISCARD	MICROBI	CONTAMIN	WSIM	GLASSWAR	METALLI	TOTAL
25.69	0.00	265.42	2.59	0.00	0.00	0.000	0.000	317.68	94.00	22.05	0.00	727.43

10. Category (See Schedule-I) of waste and Quantity of waste (KGs) to be disposed this Year

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
<b>YELLOW</b>	8.188	7.336	14.370	52.950	13.154	41.019	15.232	9.723	18.822	38.782	63.006	11.118	293.700
<b>RED</b>	11.935	9.151	18.895	50.163	17.553	47.060	22.211	17.132	21.364	56.318	36.533	9.361	317.676
<b>BLUE</b>	4.034	2.508	5.725	20.241	4.301	21.464	9.137	6.050	7.791	20.009	10.365	4.423	116.048
<b>White</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>TOTAL</b>	24.157	18.995	38.990	123.354	35.008	109.543	46.580	32.905	47.977	115.109	109.904	24.902	727.424

Date : **18/03/2017**

Place : **Sirmour**  **Signature**

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Printed On : 18/03/2017 1 - Through XGN N I C

\*\*\*\*\* END OF THE REPORT\*\*\*\*\*



**ETERNAL UNIVERSITY**

# **ENVIRONMENT AUDIT REPORT**

**2022-2023**

**PREPARED BY  
EHS ALLIANCE SERVICES**





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## AUDIT CERTIFICATE



# CERTIFICATE

PRESENTED TO

## ETERNAL UNIVERSITY

Baru Sahib, Distt. Sirmour, near Rajgarh, Himachal Pradesh 173101

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

## ENVIRONMENT AUDIT

**ACADEMIC YEAR 2022-23**

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

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



SIGNATURE



29.05.2023  
DATE OF AUDIT

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

## ACKNOWLEDGEMENT

EHS Alliance Services would like to thank the management of Eternal University for assigning this important work of Green Audit. We appreciate the cooperation of the teams for the completion of the assessment.

First of all, we would like to thank ***Prof. (Dr.) Davinder Singh, Hon'ble Vice Chancellor of Eternal University*** for giving us an opportunity to evaluate the environmental performance of the campus.

We are also thankful to

<b>Prof. (Dr.) Amrik Singh Ahluwalia</b>	Honorable Pro-Vice-Chancellor
<b>Prof. (Dr.) B. S. Sohal</b>	Controller of Examination and Dean-PGS
<b>Prof. (Dr.) N. P. Singh</b>	Dean, Research
<b>Prof. (Dr.) Tusshar Mahajan</b>	Professor, Management Department

We would also like to thank ***Dr. Puneet Negi - Assistant Professor and HoD, Physics Department*** for his Continuous Support and guidance, without which the completion of the project would not been possible. We are also thankful to other staff members actively involved in collecting the data and conducting field measurements.





## **DISCLAIMER**

EHS Alliance Services Audit Team has prepared this report for Eternal University based on input data submitted by the representatives of the University complemented with the best judgment capacity of the expert team.

While all sensible care has been taken in its preparation, details contained in this report have been compiled in good faith based on the information gathered.

It is further informed that the conclusions are arrived following best estimates and no representation, warranty or undertaking, express or implied is made and no responsibility is accepted by Audit Team in this report or for any direct or consequential loss arising from any use of the information, statements or forecasts in the report.

If you wish to distribute copies of this report external to your organisation, then all pages must be included.

EHS Alliance, its staff and agents shall keep confidential all information relating to your organisation and shall not disclose any such information to any third party, except that in the public domain or required by law or relevant accreditation bodies.

EHS Alliance staff, agents and accreditation bodies have signed individual confidentiality undertakings and will only receive confidential information on a 'need to know' basis.

**Signature**

**LEAD AUDITOR**



## CONCEPT AND CONTEXT

In India, the process for environmental audit was first mentioned under the Environment Protection Act, 1986 by the Ministry of Environment of forests on 13th march, 1992. As per this act, every person owning an industry or performing an operation or process needs a legal consent and must submit an environmental report or statement.

The National Assessment and Accreditation Council, New Delhi (NAAC) has made it mandatory from the academic year 2019–20 onwards that all Higher Educational Institutions should submit an annual Green, Environment and Energy Audit Report. Moreover, it is part of Corporate Social Responsibility of the Higher Educational Institutions to ensure that they contribute towards the sustainable environment.

In view of the NAAC circular regarding environment auditing, the University management decided to conduct an external environment assessment study by a competent external professional auditor.

The term ‘Environmental audit’ means differently to different people. Terms like ‘assessment’, ‘survey’ and ‘review’ are also used to describe similar activities. Furthermore, some organizations believe that an ‘environmental audit’ addresses only environmental matters, whereas others use the term to mean an audit of health, safety and environment-related matters. Although there is no universal definition of Environment Audit, many leading companies/institutions follow the basic philosophy and approach summarized by the broad definition adopted by the International Chambers of Commerce (ICC) in its publication of Environmental Auditing (1989).

The ICC defines Environmental Auditing as:

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

This audit focuses on the environment legal compliances and implementation of rules defined by MoEFCC or state pollution control board. The concepts, structure, objectives, methodology, tools of analysis, and objectives of the audit are discussed below.

## INTRODUCTION

Nature is a very precious gift for all life forms. Disturbance in nature causes environmental Problems. These are increasing day by day as a result of the development of urbanization and industrialization on earth. Because of the unplanned utilization of resources, our planet is facing tremendous pressure resulting in a sharp rise in temperature. Therefore, there is an urgent need to plan the consumption of resources in a sustainable manner in order to conserve natural resources for future generations.

Sustainable development is becoming popular in the world for saving the earth. Utilizing resources judiciously can save the earth's precious resources. Measurement of environmental components is the most effective step to conserve and protect natural resources.

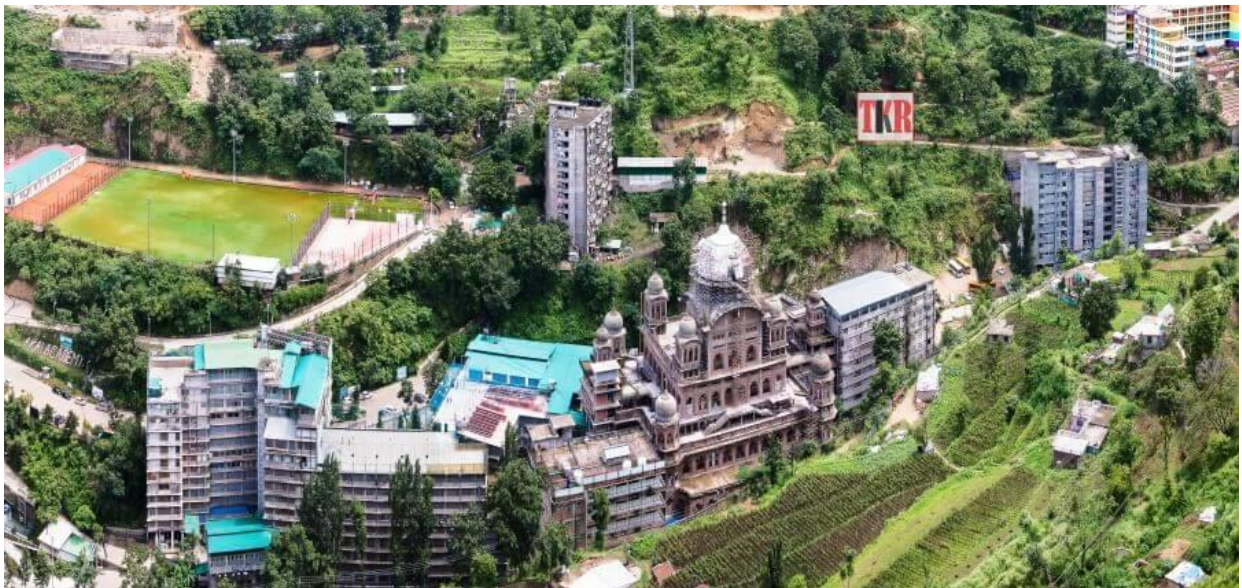
Environmental auditing began in the early 1970s with the provision of civil lawsuits for non-compliance with environmental regulations. Environment auditing involves on-site visits, collection of samples, performing analyses, and reporting results to competent authorities.

Industry and the corporate world are initiating auditing for saving natural resources. Academic institutions also can contribute to the preservation and conservation of resources within their premises.

In this "Environment Audit" report would help everyone to think about preserving resources, show a willingness to learn their importance, adopt steps to minimize resource use, and set an example for others to follow the path of eco-friendly practices to achieve the goal of sustainable development. Effective implementation of environmental auditing helps in the minimization of environmental risks at a low cost.

## OVERVIEW OF THE UNIVERSITY

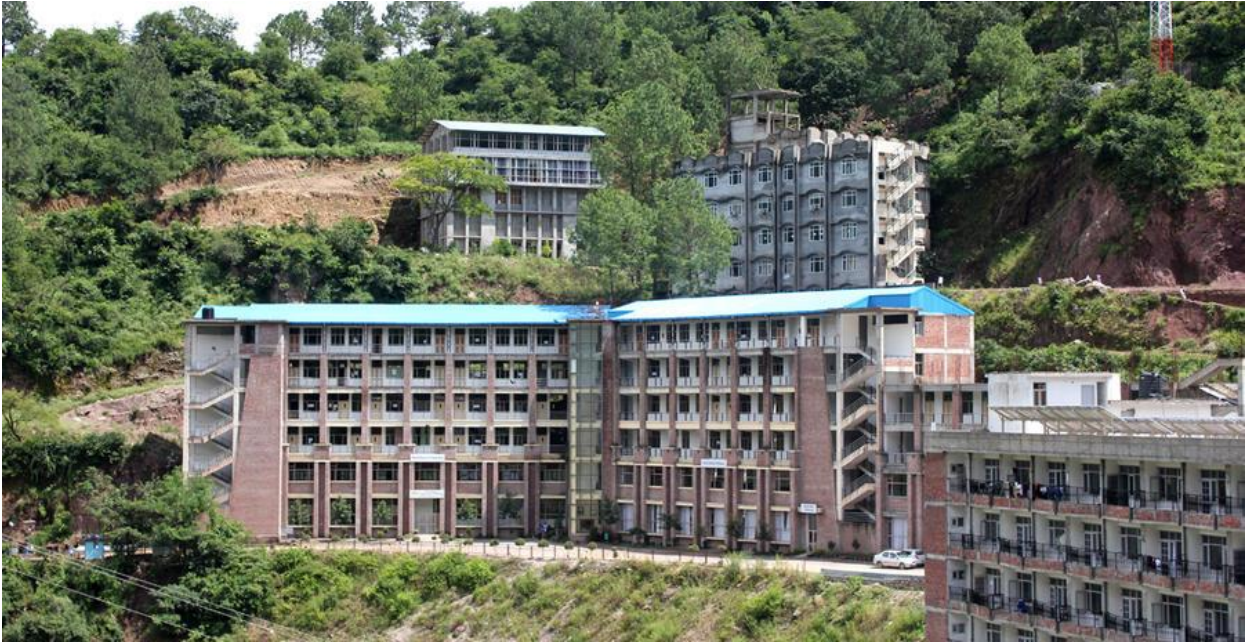
Eternal University is NAAC Accredited & ISO 9001: 2015 Certified University established under the Himachal Pradesh Private University (Establishment & Regulation) Act 2006 & Himachal Pradesh Government Act. 3 of 2009, with the right to confer degree as per the UGC public notice on private Universities dated April 18, 2011.



The great visionary of the 20th century (Sant Attar Singh Ji) had a vision that modern scientific education alone will not serve humanity well, until and unless it is amalgamated with Brahm Vidya (Spiritual Education). The graduates of this unique education system will not only be outstanding in academics, but also will have high moral values (i.e. they will have love for humanity, compassion for the weak and the underdog, and a sense of selfless service for the community). These graduates will work towards establishing permanent peace in the world. They will act as Ambassadors of Peace wherever they live, work, and raise their families.

Eternal University with its seven constituent colleges is unique in imparting value-based education to female students and is the first private university of Himachal Pradesh to start the College of Nursing, School of Public Health, and College of Agriculture. Among several previous recognitions, Eternal University has been recently recognized as “The 20th Best Higher Education Institution in India, 2019 which provides a broader perspective and cutting-edge higher education with a focal point on fostering skills and innovation” by EDUCATION BRAINIAC magazine.





In a largely residential campus the day-scholar girl students from nearby areas of Sirmour district who could commute from home can now also pursue their studies in the Eternal University. This campus is situated in the Valley of Divine Peace, the Modern Gurukul provides the safest, drug and pollution-free environment with facilities such as a sports complex, gymnasium, NSS and NCC units, experimental farms, polyhouses, modern dairy complex, solar power utilization systems and support for holistic development of its students. The Eternal University has organized several conferences, workshops, camps and Kisan Melas with an emphasis on addressing the crucial problems of farmers of Sirmour and adjoining districts of Himachal Pradesh for their inclusive development.





The university offers 18 Bachelor programs, 28 Master Programmes, and 22 Doctorate Programmes.

### Bachelor Programs

B.Sc. (Hons) Agriculture	B.Tech. Food Technology	B.Tech. CSE	B.Sc. Information Technology	B.Sc. Non-Medical
B.Sc. (Hon.) Mathematics	B.Sc. (Hons.) Microbiology	B.Sc. (Hons.) Economics	B. Ed	B.Com (Hons.)
B.B.A.	B.A. (Hons.) Music	B.A. Humanities	B.Sc. (Hons.) Psychology	B. Lib
	B.Sc. Medical	B.Tech. CSE Lateral/Migrated	<i>B.Sc. Nursing</i>	

### Master Programs

M.Sc. Agronomy	M.Sc. Ag. Genetics & Plant Breeding	M.Sc. Ag. (Entomology)	M.Sc. Ag. (Horticulture) Vegetable Science	M.Sc. Ag. (Horticulture) Fruit Science
M.Sc. Ag. Horticulture (Floriculture & Landscape Architecture)	M.Sc. Ag. Plant Pathology	M.Sc. Agricultural Economics	M.Sc. Food Science & Technology	M.Tech. Food Technology
M.Tech. CSE	M.Sc. Botany	M.Sc. Chemistry	M.Sc. Mathematics	M.Sc. Microbiology
M.Sc. Physics	M.Sc. Zoology	M.P.H	M.Sc. Economics	M.Com.
Master of Business Administration	M.A. Music	M.A. (Hons.) Punjabi	M.Sc. Psychology	M.A. English
	M.A. Education	M.Sc. Biotechnology	M.Sc. Nursing	

## Doctorate Programs

Ph.D. Biotechnology	Ph.D. Food Technology	Ph.D. CSE	Ph.D. Botany	Ph.D. Chemistry	Ph.D. Microbiology
Ph.D. Mathematics	Ph.D. Physics	Ph.D. Zoology	Ph.D. Economics	Ph.D. Management	Ph.D. English
Ph.D. Music	Ph.D. Public Health	Ph.D. Horticulture (Veg Science)	Ph.D. Agronomy	Ph.D. Entomology	Ph.D. Commerce
Ph.D. Punjabi	Ph.D. Genetics & Plant Breeding	Ph.D. Nursing	Ph.D. Psychology	Ph.D. Education	

## Certificate Courses

Geriatric Care Assistant

Mental Health and Substance Abuse

## Diploma Courses

P.G. Diploma in Rehabilitation Psychology (PGDRP)

## Adon-Courses

Library Science

Career Guidance & Counselling

# VISION | MISSION

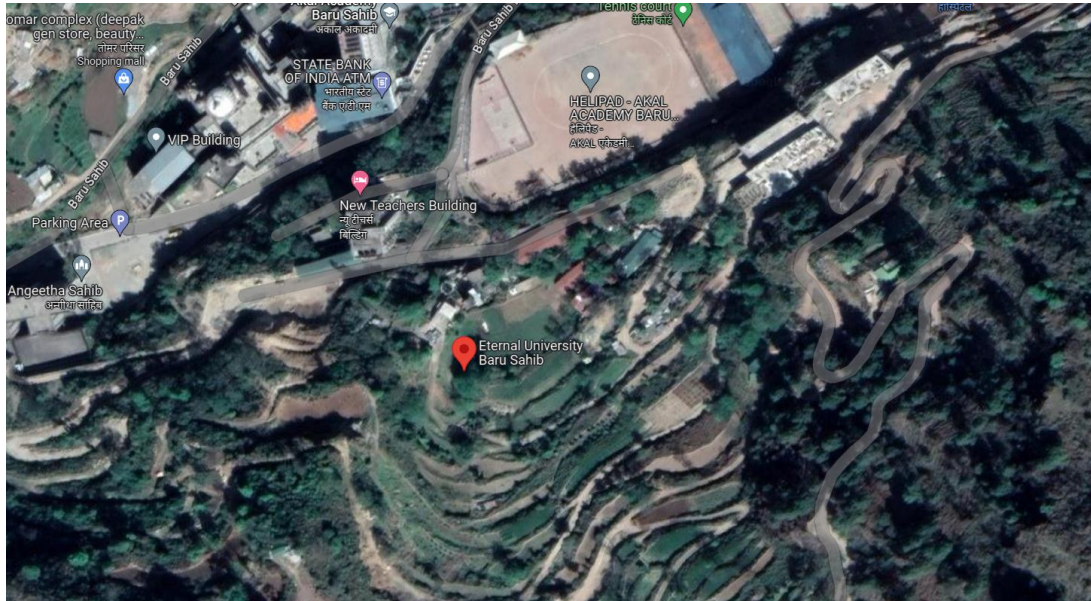
## VISION

The relatively young Eternal University with its diverse programs, priorities, commitments, values, and efforts strives to emerge as a world-class women's university with its centre of excellence in science, technology, arts, and management. Major emphases will be focused on developing and strengthening industrial-institution linkages and harnessing the strength of its alumni for skill development, technology transfer, resource generation, and employment opportunities. Its graduates engrossed with holistic development, human values, professional ethics and skills, and entrepreneurship will adapt and earn comfortable livelihoods and serve mankind with love and devotion for its inclusive and sustainable development as our ambassadors of universal brotherhood for world peace."

## MISSION

To transform and empower young women talent through cutting edge education in science, technology, arts and management amalgamated with spiritual rejuvenation for their holistic development to serve the mankind with compassion and love.

## Geo Location



Geo Coordinates from Google maps: 30.753674, 77.296542

## AUDIT PARTICIPANTS

On behalf of the University

Name	Designation
<i>Prof. (Dr.) Davinder Singh</i>	<i>Honorable Vice Chancellor</i>
<i>Prof. (Dr.) Amrik Singh Ahluwalia</i>	<i>Honorable Pro-Vice Chancellor</i>
<i>Prof. (Dr.) B. S. Sohal</i>	<i>Controller of Examination and Dean-PGS</i>
<i>Prof. (Dr.) N. P. Singh</i>	<i>Dean, Research</i>
<i>Prof. (Dr.) Tusshar Mahajan</i>	<i>Professor, Management Department</i>
<i>Dr. S. K. Sharma</i>	<i>Dean, Dr. K. S. Gill ACA</i>
<i>Dr. B. D. Sharma</i>	<i>Adjunct Professor, Botany</i>
<i>Dr. Puneet Negi</i>	<i>Assistant Professor and HoD, Physics</i>
<i>Mr. B. S. Kapoor</i>	<i>Accounts Officer</i>
<i>Er. Rajeev Thakur</i>	<i>Assistant Professor, CSE</i>
<i>Mr. Sukhwinder Singh</i>	<i>Transport Manager</i>
<i>Er. Hemant Singh</i>	<i>Electrical Engineer</i>
<i>Mr. Santosh Sukla</i>	<i>Solid Waste Management supervisor</i>
<i>Mr. Manoj</i>	<i>Wastewater treatment supervisor</i>

On behalf of EHS Alliance Services

Name	Position	Qualifications
<i>Dr. Uday Pratap</i>	<i>Lead Auditor</i>	<i>Ph.D., PDIS, QCI – WASH, Lead Auditor ISO 14001:2015</i>
<i>Ms. Pooja Kaushik</i>	<i>Co-Auditor</i>	<i>M.Sc., Field Expert, QCI – WASH</i>

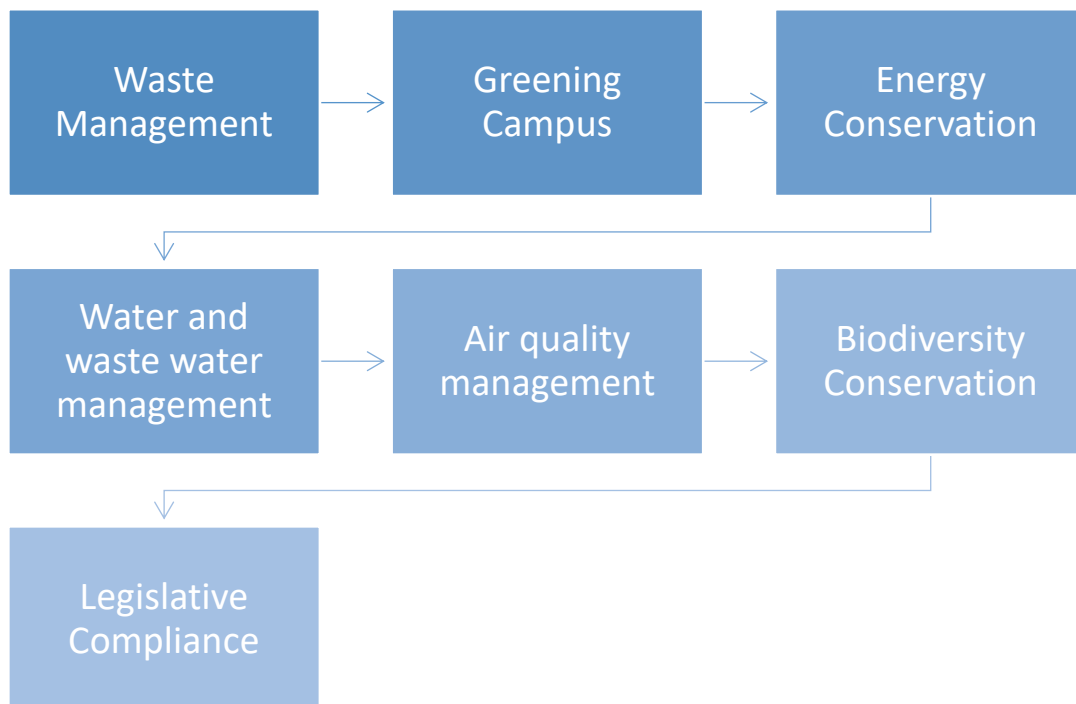


# EXECUTIVE SUMMARY

The environment audit is a snapshot in time, in which one assesses campus performance in complying with applicable environmental laws and regulations. Though a helpful benchmark, the audit almost immediately becomes outdated unless there is some mechanism in place to continue the effort of monitoring environmental compliance. Our approach to promoting a Green Campus is to inculcate sustainable value systems among the students so that they carry the learning and practice them in their future endeavors. This will ensure that Sustainability and Environmental practices get embedded in all the institutions and organizations in the country.

A Green Campus is a place where environmentally friendly practices and education combine to promote sustainability in the campus which ultimately offers an institution the opportunity to take the lead in redefining its environmental culture and developing new paradigms by creating sustainable solutions to the environmental, social, and economic needs of the mankind.

This is the second consecutive environment audit of the University for doing its bit towards environmental protection and environmental awareness at local and global fronts. The audit criterion is environmental cognizance, waste minimization and management, biodiversity conservation, water conservation, energy conservation, and environmental legislative compliance by the campus. A questionnaire is used during the audit. This audit report contains observations and recommendations for the improvement of environmental consciousness.



# WASTE MANAGEMENT

## TYPES OF WASTE ON UNIVERSITY CAMPUS

To create effective waste management plans, university first need to know the types of waste they produce. Below, we have compiled a list of various kinds of waste commonly generated on institutional campus:

1. **Food Waste** - University campus generates food waste. The average mess and canteen generate approximately 10 kg of food waste a day. The reasons for food waste on an educational campus may be over purchasing food to ensure a sufficient supply and then throwing it away, especially in all hostel messes where plentiful stores are essential. And in the cafeteria or hostel mess, students may pile food onto their ample trays, find it unappealing once they sit down and dutifully scrape it into the garbage. Immediate attention is given to the food waste minimization techniques.
2. **Recyclable Paper, Cardboard, Plastic, Glass and Cans** -Campus tends to produce vast quantities of these recyclables. Even in the digital age, many students, professors and staff members still prefer handwritten notes and end up with piles of unwanted paper once their courses and projects are complete. The snacks so essential to late-night studying or socializing tend to come in recyclable plastic, glass or aluminium containers. And shipments of necessary items throughout the year are likely to arrive in recyclable plastic and cardboard packaging. Quantitative analysis should be carried out to reduce waste in coming academic sessions.
3. **Student Clothes and Housewares** - As we have mentioned above, many students find it more convenient to throw away their clothes and dorm furnishings at the end of the year than donate or recycle them. The university should adopt a donation camp in the summer and winter seasons to help needy people.
4. **E – Waste - Student and facility electronics often form a large portion of a campus's waste** — As campus continually upgrade their computing facilities and office computers to keep up with the latest technology, the old computers have to go somewhere. So do old printers, phones, copy machines and other electronics that have received upgrades over the years. Discarded student electronics often become part of a university's waste stream as well. Students may throw away old phones, TVs, tablets, laptops, and printers, along with cords and other accessories. Recycling is a much more eco-friendly option — the metals in old electronics often have a high reuse value. University has tie-up with external authorized agencies details mentioned in legislation compliances.
5. **Chemical Waste** - Chemical waste on a university campus may come from numerous sources. Campus laboratories generate waste chemicals, as do cleaning services. The detergents used in campus laundry rooms eventually become waste as well. Much of these chemical substances are hazardous waste under the Manufacture, Storage and Import of

Hazardous Chemicals Rules, 1989 and must undergo specific disposal processes according to state environmental rules and regulations.

6. **Maintenance Waste** - In the maintenance department, spent paints, solvents, adhesives and lubricants all form potentially hazardous waste. Because they are difficult to recycle, spent incandescent light bulbs usually become landfill waste. Spent fluorescent light bulbs, which contain small amounts of mercury, typically require special handling because of the environmental and health risks they pose.
7. **Biological Waste** - Biological waste from laboratories and campus medical centres will require special handling and disposal as per BMW Rules, 2016. Tissue from biology and cadaver labs forms biological waste, as do tissue samples, contaminated bandages and used sharps from medical facilities.
8. **Furniture** - Furniture waste on a university campus has a couple different sources. The campus itself may also get rid of old furniture as it modernizes its classrooms, cafeterias, computer labs and study spaces. Annually sold to junk dealer.
9. **Books/Magazines/Newspapers** - Books accounted for solid waste generation and university often generate tons of textbook waste. As courses upgrade to new editions, they may end up throwing their newly obsolete textbooks into the garbage if donation programs cannot use them. Students, too, may find it more convenient merely to throw away their books at the end of the year rather than donating or reselling them.
10. **C & D Waste** - Due to expansion of university campus building and renovation works result significant amount of construction and demolition waste that should be either used for back filling or disposed-off through authorised dumping site by CPCB/SPCB.
11. **Municipal Solid Waste** - The University is managing solid waste by its own through waste treatment plant that has competent & trained personnel.
12. **Horticulture Waste** – University campus has lavished greenery and grounds that results significant horticulture waste which is managed by in-house composting system.

# ENERGY CONSERVATION

**1. List ten ways that you use energy in your institute. (Electricity, LPG, firewood, others). Using this list, try to think of ways that you could use less energy every day.**

- Electricity is saved by use of LED bulbs for illumination
- LPG saves by use of Pressure cookers for cooking food.
- Solar heaters usage in kitchens and hostels
- 200 kW Solar power plant installed, to save Grid electricity

**2. Are there any energy saving methods employed in your institute? If yes, please specify. If no, suggest some**

*Yes, Renewable source of energy through 200 KVA solar panel is operational*

**3. How many CFL/LED bulbs has your institute installed?**

*80 % of Total Conventional bulbs and tube lights are replaced by LED/CFL Lights.*

**4. Do you run “switch off” drills at institute?**

*Yes*

**5. Are your computers and other equipment’s put on power-saving mode?**

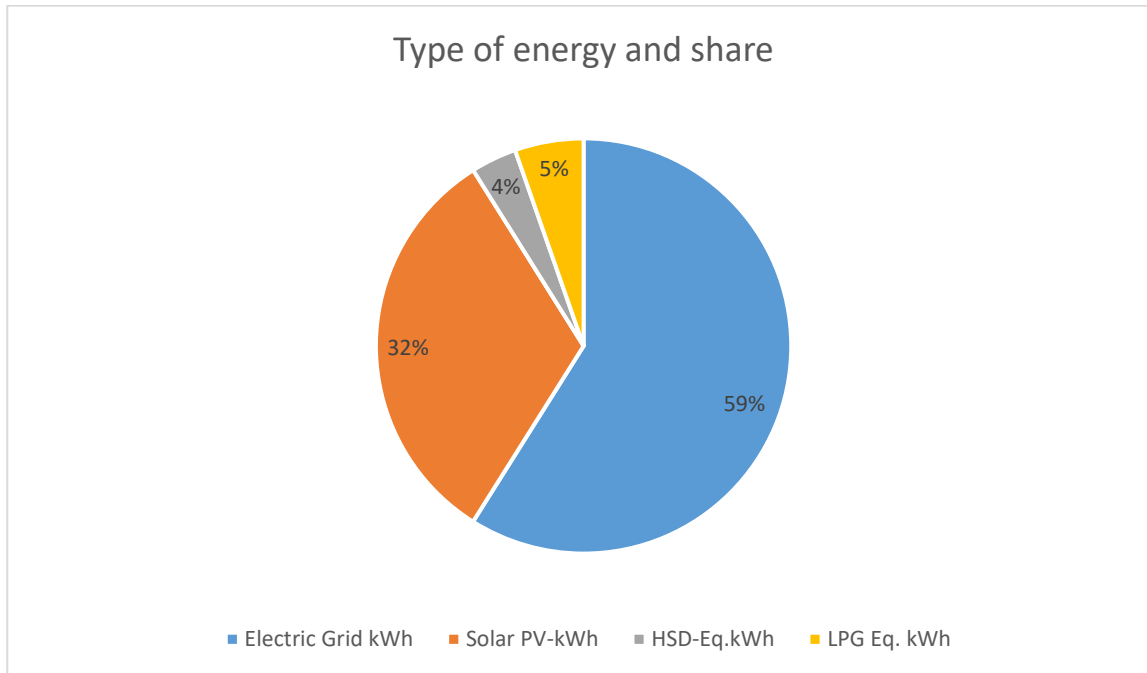
*Yes, In Practice*

**6. Does your machinery (TV, AC, Computer, weighing balance, printers, etc.) run on standby modes most of the time? If yes, how many hours?**

*Yes, approx. 6 hours*

Energy Share	kWh	Percentage
Electric Grid kWh	237776	58.94%
Solar PV-kWh	129652	32.14%
HSD-Eq. kWh	14400	3.57%
LPG Eq. kWh	21600	5.35%
<b>Total -kWh</b>	<b>403428</b>	<b>100%</b>





## WATER AND WASTEWATER MANAGEMENT

### 1. List uses of water in your institute

*Basic use of water in campus:*

*Drinking – 34.44 KL/month*

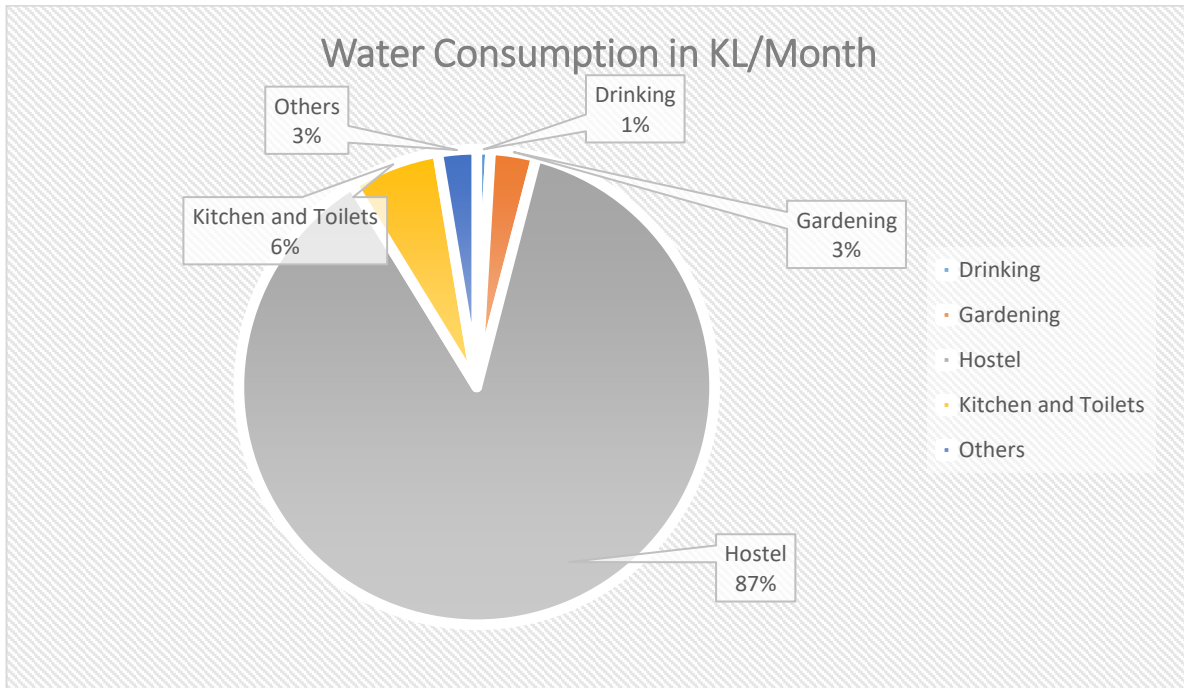
*Gardening – 114.41 KL/month (mostly STP Treated water is being used for gardening)*

*Kitchen and Toilets – 225.79 KL/month*

*Others – 96.94 KL/month*

*Hostel – 3210.30 KL/Month*

*Total = 3681.88 KL/Month*



## 2. How does your institute store water? Are there any water saving techniques followed in your institute?

**Storage:** Water is stored in multiple water tanks situated on the roof of the building and then it is transferred to different areas of the university to fulfil the water requirement for different purposes.

**Saving Techniques:** Avoid overflow of water-controlled valves provided in the water supply system. Close supervision of the water supply system. Avoid overflow of water-controlled valves provided in the water supply system. Close supervision of the water supply system.

## 3. Locate the point of entry of water and point of exit of waste water in your institute. (Entry and Exit)

*Point of Entry - Natural Spring Water*

*Point of Exit –*

1. From the Canteen, Toilets, and bathrooms by covered drainage which is connected to (1000 KLD) STP in the campus area.
2. From labs and medicals to STP (35 KLD) And, then, provided to Agriculture Farms.

## 4. Write down ways that could reduce the amount of water used in your institute

*Basic ways:*

- *Close the taps after usage*
- *Maintenance and monitoring of valves in the supply system to avoid overflow, leakage, and spillage*
- *Water Conservation awareness for new students*
- *Initiate the installation of waterless urinals*

## 5. Does your institute harvest rainwater?

No

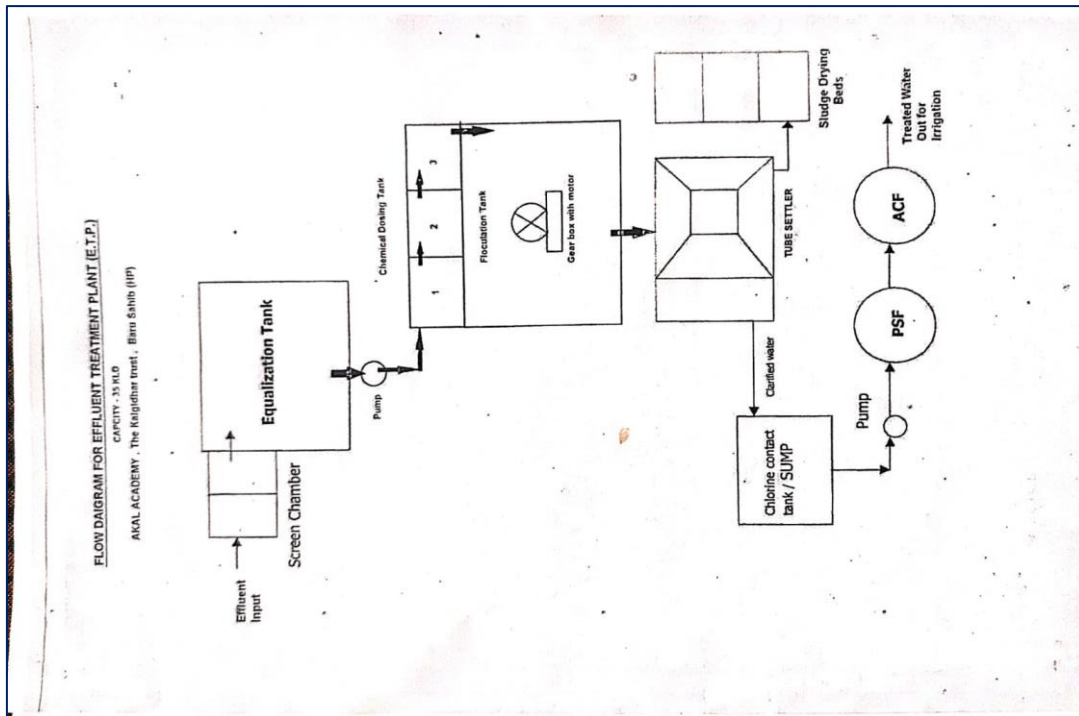
## 6. Is there any water recycling System?

STP – 1000 KLD

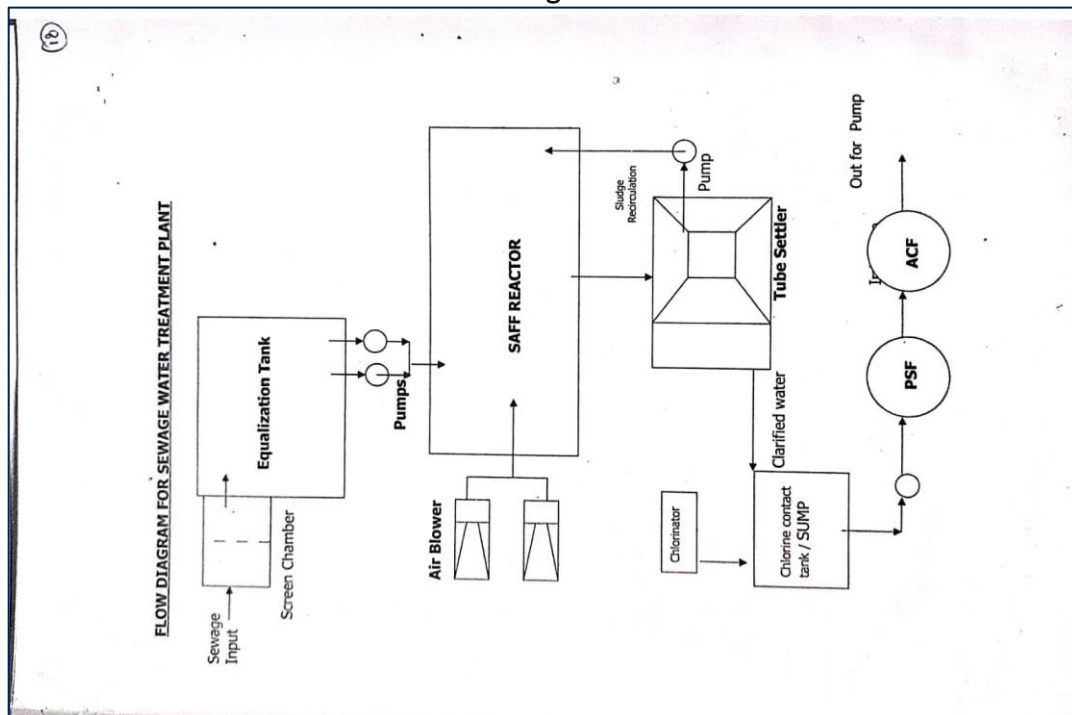
ETP – 35 KLD

Zero liquid discharge (ZLD) is a strategic wastewater management system that ensures that there will be no discharge of industrial/hospital wastewater into the environment. It is achieved by treating wastewater through recycling and then recovery and reuse for flushing, gardening, DG cooling, and housekeeping purposes. 1000 KLD STP and 35 KLD ETP are for hospitals installed and functional on Campus as per Environment Clearance from State Pollution Control Board dated.

Below are the flowchart diagrams for the ETP and STP plant in Eternal University.



The flow diagram of ETP



The flow diagram of STP



## AIR QUALITY MANAGEMENT

### 1. Are the Rooms on Campus Well Ventilated?

*Yes, as per the National Building Code, guidelines*

### 2. Window Floor ratio of the Rooms?

*Very Good, ample daylight utilization*

### 3. What is the ownership of the vehicles used by your campus?

*University and Personal owned vehicles only*

### 4. Provide details of university-owned vehicles.

*Details of the vehicles are as follows*

*Bus – 4*

*Cars – 2*

*Vans – 2*

*Others – 1*

*Electric -2*

*Total – 11*

### 5. PUC done?

*Yes*

### 6. Specify the type of fuel used by your campus's vehicles

*Vehicles use diesel, petrol, and electricity on the campus.*

### 7. Air Quality Monitoring Program (If, Any)

*Yes, with university equipment.*

## ENVIRONMENT LEGISLATIVE COMPLIANCE

### 1. Are you aware of any environmental Laws Pertaining to different aspects of environmental management?

*Yes, faculty members and the administrative team are well aware of national environmental laws.*

### 2. Does your institute have any rules to protect the environment? List possible rules you could include.

*Yes, innovative initiatives are being taken by the campus to reduce pollution and go green.*

### 3. Does Environmental Ambient Air Quality Monitoring conducted by the Institute?

Yes

### 4. Is environmental Water and Wastewater Quality monitoring conducted by the Institute?

Yes

### 5. Is stack monitoring of DG sets conducted by the Institute?

*Yes, by an approved Laboratory.*

### 6. Is any warning notice, or letter issued by state government bodies?

No

### 7. Is any Hazardous waste generated by the Institute?

*Yes, BMW is managed by incinerators and ETP*

## GENERAL INFORMATION

**1. Does your institute have any rules to protect the environment? List possible rules you could include.**

*Yes, the SDG committee takes decisions for environmental protection in campus, for example – the reuse of waste plastic into bricks and pots, making file covers from used papers, etc.*

**2. Are students and faculties aware of environmental cleanliness ways? If Yes Explain**

*Yes, periodic pollution reduction, plantation, and energy conservation awareness campaigns carried out by the institute*

**3. Does Important Days Like World Environment Day, Earth Day, and Ozone Day etc. eminent in Campus?**

*Yes, Earth Day, Ozone Day, World Environment Day, and more are celebrated by campus.*

**4. Does the Institute participate in National and Local Environmental Protection Movement?**

*Yes, Swatch Bharat Abhiyan by students at campus*

**5. Does Institute have any Recognition or certification for environment friendliness?**

*Yes, Earth Day, Ozone Day, World Environment Day, and more are celebrated by campus.*

**6. Does Institute participate in National and Local Environmental Protection Movement?**

*Yes, for e waste management recognition certificate (copy attached)*

## 7. Does the Institution conduct a green or environmental audit of its campus?

*This is the second external audit carried out by the university.*

## 8. Has the institution been audited /accredited by any other agency such as NABL, NABET, TQPM, NAAC etc.?

*Yes, periodically audited by such agencies for continual improvement. (Please provide certificates of NABL)*

# RECOMMENDATIONS

- Green building guidelines with ECBC compliance should be adopted for future expansion projects/ buildings of the university.
- Provide sanitary waste disposal facility as per the CPCB guidelines for management of sanitary waste (as per Solid Waste Management Rules, 2016). Periodical inspection & scheduled maintenance is recommended for previously installed Incinerator in the university campus.
- Environmental Monitoring i.e. (Ambient Air Quality monitoring, Stack Monitoring of DG sets, Water monitoring need to be conducted by State Pollution Control Committee, approved laboratory)
- An environmental policy document should be displayed in campus with all the recommendations and current practice carried by Eternal University.
- Environmental parameters should be included in purchase policy to achieve cradle to grave approach for sustainability.



## CONCLUSION

This audit involved extensive consultation with all the campus team and interactions with key personnel on a wide range of issues related to environmental aspects. Overall, 80% of the university campus is for landscaping. The audit has identified some observations for making the campus premises more environmentally friendly. The recommendations are also mentioned with observations for the university campus team to initiate actions. The audit team opines that the overall site is well-maintained from an environmental perspective. Still, there are a few things that are important to initiate urgently which include the installation of the incinerator, air quality monitoring, and periodic inspection of buildings to increase energy efficiency.

## REFERENCES

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

## ANNEXURE PHOTOGRAPHS – WASTE MANAGEMENT AND RECYCLING



Plastic Waste Recycling  
to Flower Pots



Plastic Waste recycling  
to Sand Bricks



Waste Categorization  
and Recycling



Vermi Coposting in  
Campus



Colour Coded Dust  
Bins in Campus



Paper Waste Recycling



Solar PV



Solar Heaters



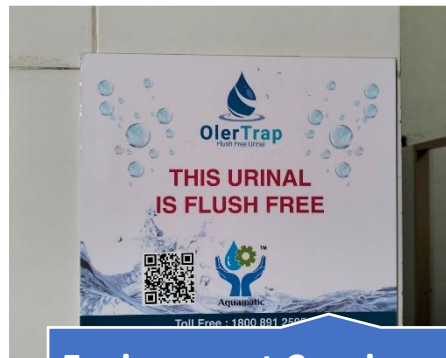
Composter machine



5 Star appliances



Electric vehicle in  
campus



Environment Concious  
Posters on Campus





# MOU FOR E-WASTE MANAGEMENT

*"Laboratory is a Temple where Search for Truth is actually made"*  
ESTD-1974

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**WORKS :** 240, Industrial Area,  
Phase III, S.A.S. Nagar, Mohali  
Email : services@utalabindia@yahoo.com

**TEST REPORT** PAGE 1 OF 1

To, MA Akal Academy Baru Sahib (H.P.) Product: Drinking Water. Condition: Glass Bottle. Identification: CHASMA BARU SAHIB	Lab ID No. : UTALAB23/0053 A Date of issue : 19.01.2023 Date of testing : 10.01.2023-19.01.2023 Date of receipt : 10.01.2023 Ref. No. : Letter Specification followed: IS : 10500-2012
---	---

**Description:** An Almost colourless liquid contained in a glass bottle.

Sl. No.	Parameters	Results	IS: 10500 Requirements	
			Desirable	Permissible
1	pH value	7.7	6.5-8.5	No relaxation
2	Odour	Agreeable	Agreeable	Agreeable
3	Colour (Hazen Unit)	Less than one	Max 05	Max 15
4	Taste	Agreeable	Agreeable	Agreeable
5	Turbidity (NTU)	00	Max 01	Max 05
6	Total Hardness (as CaCO <sub>3</sub> )-mg/l	241.8	Max 200	Max 600
7	Total Dissolved Solids (TDS)-mg/l	404	Max 500	Max 2000
8	Fluoride (as F)-mg/l	0.5	Max 1.0	Max 1.5
9	Nitrate (as NO <sub>3</sub> )-mg/l	3.5	Max 45	No relaxation
10	Chloride (as Cl)-mg/l	3.1	Max 250	Max 1000
11	Sulphate (as SO <sub>4</sub> )-mg/l	41.5	Max 200	Max 400
12	Iron (as Fe)-mg/l	0.15	Max 0.3	No relaxation
13	Lead (as Pb)-mg/l	<0.01	Max 0.01	No Relaxation
14	Copper (as Cu)-mg/l	<0.05	Max 0.05	Max 1.5
15	Free residual chlorine mg/l	Not detectable	Max 0.2	Max 1
16	Mercury (as Hg) mg/l	<0.001	Max 0.001	No Relaxation
17	Manganese (as Mn) mg/l	<0.1	Max 0.1	Max 0.3
18	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH) mg/l	Not detectable	Max 0.001	Max 0.002

**Remarks:** The above submitted sample of water conforms to IS: 10500-2012 within permissible limits.

**REVIEWED BY** **AUTHORIZED SIGNATORY**

\*\*\* END OF THE REPORT \*\*\*

**SHIVALIK SOLID WASTE MANAGEMENT LTD. (Unit-II)**  
CIN: U33130HP2005PLC028806  
FORM 8 (Part A) 8/9  
**E-WASTE MANIFEST 641**

1. Sender's Name and mailing address (including Phone No. and e-mail) Mr. Jankaj (Aulke)	Eternal University Baru Sahib, Himachal Pradesh Phone No: 9804003027 e-mail:
2. Sender's Authorization No. (if applicable)	697
3. Manifest Document No.	
4. Transporter's name and address (including Phone No. and e-mail)	Shivalik Solid Waste Management Ltd. (Unit II) Village Sabawal, P.O. Tehsil Nalagarh, Distt Solan (HP)
5. Type of Vehicle	(Truck/ Tanker/ Special Vehicle)
6. Transporter's registration no.	N-02108
7. Vehicle registration no.	HP16 - 5863
8. Receiver's Name and address	Shivalik Solid Waste Management Ltd. (Unit II) Village Sabawal, P.O. Tehsil Nalagarh, Distt Solan (HP)
9. Receiver's Authorization No. (if applicable)	N-001/12
10. Description of E-Waste (Item, Weight/ Numbers) E-waste - Computer, Laptop, Printer, Mouse, Keyboard Cat. No. TEW3 Qty = 2 kg	
11. Name and stamp of Sender* (Manufacturer or Producer or Bulk Consumer or Collection Centre or Refurbisher or Dismantler) Name and stamp : Signature : Day Month Year 24 - 07 - 2020	
12. Transporter acknowledgement of receipt of E-Wastes Name and stamp of Sender* (Signature) (Unit-II) Day Month Year Village Sabawal, P.O. & Teh Nalagarh, Distt Solan Himachal Pradesh-174101 24 - 07 - 2020	
13. Receiver* (Collection Centre or Refurbisher or Dismantler or recycler) certification of receipt of E-Waste Name and stamp : Signature : Day Month Year	

\*As applicable

## Bio-Hazardous Waste Management System/ MoU

**H.P. STATE POLLUTION CONTROL BOARD**  
HIM PARIVESH, PHASE-III, NEW SHIMLA-171009

HPSPCB No:851 Date:27/09/2022  
HCF Registration ID: HP10572068 Application No: 7048002

To, Akal charitable hospital, baru sahib  
Akal charitable hospital  
Baru sahib  
Sirmaur  
173101

Subject: Consent to Establish under provisions of Water (Prevention & Control of Pollution) Act, 1974 and Air (Prevention & Control of Pollution) Act, 1981.

With reference to your application for obtaining 'Consent to Establish' u/s 25/26 of Water (Prevention & Control of Pollution) Act, 1974 and u/s 21 of Air (Prevention & Control of Pollution) Act, 1981; the State Board on the recommendation of In-charge Central/ Regional Laboratory and as per this Office Order No. 21562-80 dated 4.10.2019, hereby grants Consent to Establish subject to the following terms and conditions:

**1. Particulars of Consent to Establish under Water Act, 1974 and Air Act, 1981 granted to the HCF**

Consent No.	CTE/BOTH/NEW/LAR/2022/7048002		
Date of issue :	27/09/2022		
Date of expiry :	26/09/2023		
Certificate Type :	NEW		
Previous CTE/CTO No. & Validity :	NEW		

**2. Particulars of the HCF/CB/WTF/Unit**

Name & Designation of the Applicant	Dr Davinder Singh, (Proprietor)		
Address of Health Care Facility	Akal charitable hospital, baru sahib, Akal charitable hospital, Baru sahib, Sirmaur-173101		
Type of HCF: Allopathic/ Ayurvedic/ Veterinary	ALLOPATHIC PVT		
Bedded/Non-Bedded	Bedded		
Bed Capacity	100		
District	Sirmaur		

Process of Treatment (if HCF has any treatment plant for chemical liquid waste, industrial, domestic or combined effluent)

Description	Quantity (in KLD)	Method of Treatment	Method of Disposal
Domestic	1.6	ETP	Irrigation & Gardening
Industrial Process	0.6	ETP	Irrigation & Gardening

**Type of Liquid Waste Treatment System installed**

Installed	Capacity	Quantity	Unit
ETP	35	1	KLD

# ETERNAL UNIVERSITY

Environment Friendly Campus for Education  
Baru Sahib, Himachal Pradesh

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MAY 25, 2023

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\*\*\*\*\* END OF THE REPORT\*\*\*\*\*