

# ***GREEN AUDIT***

***REPORT OF***

## ***SRI KRISHNA INSTITUTE OF TECHNOLOGY***

***No.29, CHIMNEY HILLS, HESARAGHATTA MAIN ROAD,  
CHIKKABANAVARA POST  
BANGALORE-560 090***

***(FOR THE ACADEMIC YEAR 2020-2021)***



***Submitted by:***



## ***ENVIROO WORLD***

***No. 15, SERVICE ROAD, HAMPI NAGAR***

***VIJAYNAGAR , BENGALURU - 560104***

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# 1. Green Auditing

## Introduction:

The Green audit aims to analyse environmental practices within and outside the university campuses, which will have an impact on the eco- friendly atmosphere. Green audit can be defined as systematic identification, quantification, recording and analysis of components of university environment. It was initiated with the motive of inspecting the effort within the institutions whose exercises can cause threat to the health of inhabitants and the environment. Through the green audit, we can determine how to improve the structure of environment and there are several factors that determine the growth.

It is the duty of organizations to carry out the Green Audits of their on-going processes for various reasons such as; to make sure whether they are performing in accordance with relevant rules and regulations, to improve the procedures and ability of materials, to analyse the potential duties and to determine a way which can lower the cost and add to the revenue.

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. The intention of organizing Green Audit is to upgrade the environment condition in and around the institutes, colleges, companies, and other organizations. It is carried out with the aid of performing tasks like waste management, energy saving and others to turn into a better environmentally friendly institute.

## **Objectives:**

- Securing the environment and cut down the threats posed to human health.
- To make sure that rules and regulations are taken care of.
- To avoid the interruptions in environment that are more difficult to handle and their correction requires high cost.
- To suggest the best protocols for adding to sustainable development

## **Benefits of Green Audit:**

- It would help to shield the environment
- Recognize the cost saving methods through waste minimizing and managing
- Point out the prevailing and forthcoming complications
- Authenticate conformity with the implemented laws
- Empower the organizations to frame a better environmental performance
- Sustainable use of natural resource in the campus.
- Development of ownership, personal and social responsibility for the College campus and its environment
- Enhancement of College profile.
- Developing an environmental ethic and value systems in young people
- Enhance the alertness for environmental guidelines and duties

## 2. About The College

### **Introduction about the city:**

Bangalore is the capital city of the Karnataka state. It has a metropolitan population of around 12 million, making it the ninth most populous urban agglomeration in India. Located in southern India on the Deccan Plateau, at a height of over 900 m (3,000 ft) above sea level, Bangalore is known for its pleasant climate throughout the year. Its elevation is the highest among the major cities of India. Bangalore is widely regarded as the & quote; Silicon Valley of India because of its role as the nation & leading information technology (IT) exporter.

### **Introduction of the college:**

Sri Krishna Institute of Technology (SKIT) is situated in the picturesque location of Chimney Hills, Chikkabanavara on Hesaraghatta road and has a serene atmosphere, congenial for the pursuit of studies situated on top of a hillock overlooking vast verdant green land and watersheds enthralls the visitors by its captivating beauty.

The institute has marked a niche in the field of Technical Education with the state-of-the-art teaching equipment, innovative teaching methods, and good infrastructure, highly qualified and experienced teaching faculty committed to imparting quality education. The dedicated teachers interact with every student through the proctorial system to counsel and guide them. The office staff is always ready to help the students in their academic and administrative queries.

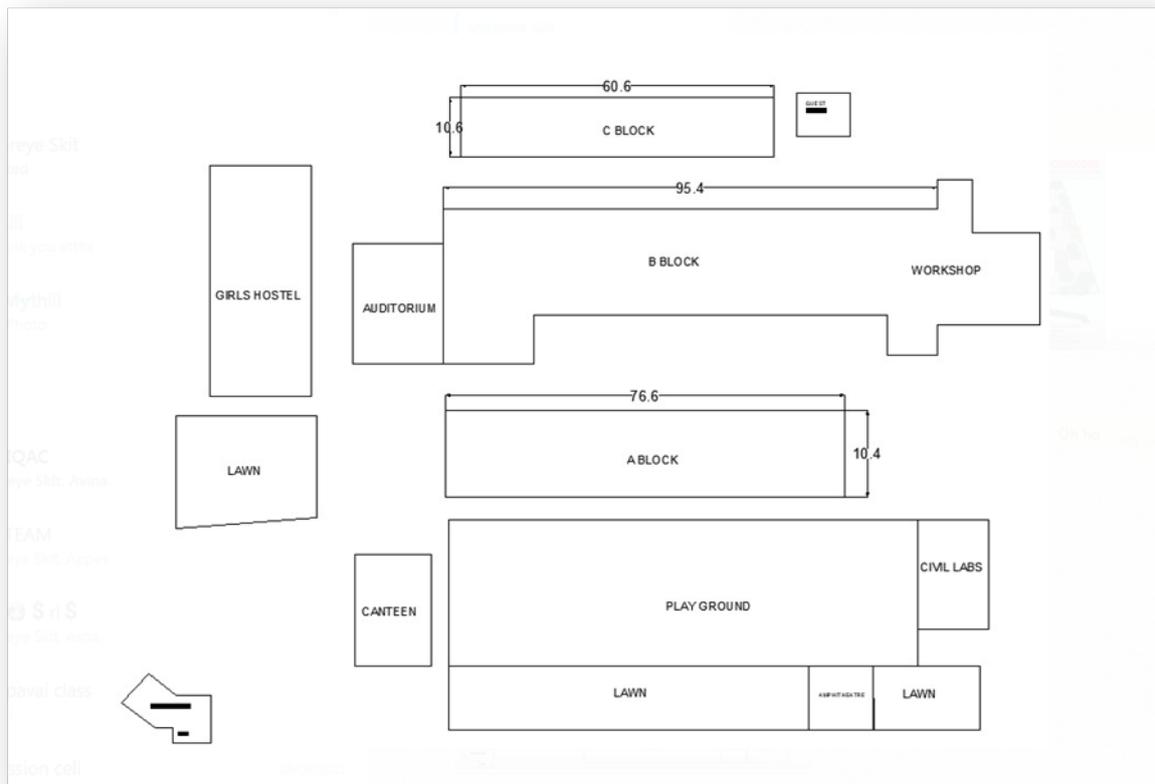
The total Number of students is 865 and total numbers of staff are around 76 numbers. SKIT has its own bus facility for students with 2 busses at 6 stops in the city.

Details are listed in the table no.1 below:

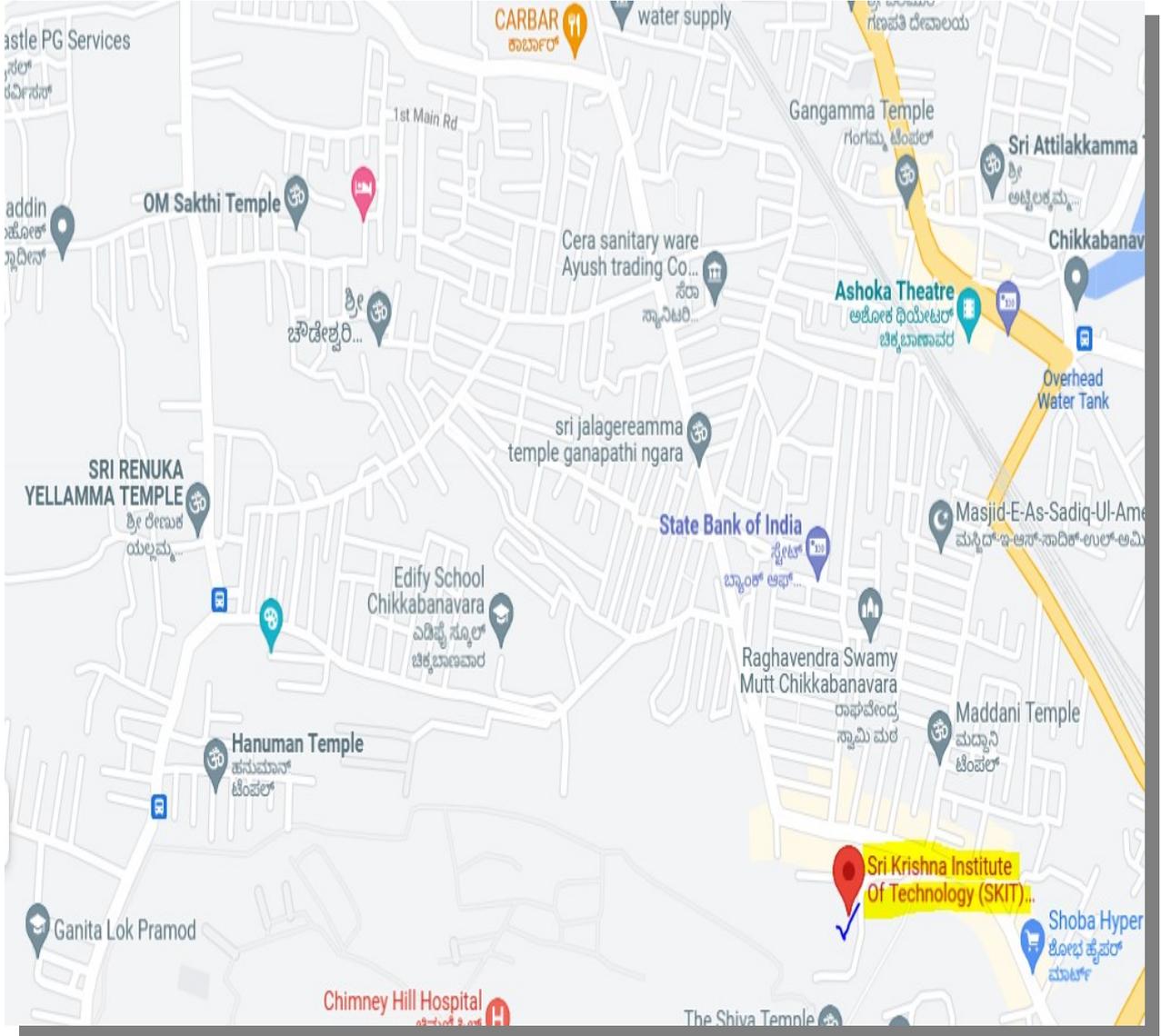
	Male	Female	Total
<b>Students</b>	580	285	<b>865</b>
<b>Teaching staff</b>	39	37	<b>76</b>
<b>Non-Teaching Staff</b>	7	9	<b>16</b>
<b>Sub Total</b>	626	331	<b>957</b>
<b>Approximate Number of Visitors (Per day)</b>			<b>20</b>
<b>What is the total number of working days of your campus in a year?</b>			<b>215</b>

**Table No.1**

**SKIT Layout and Location Map**



**Photo: 1 SKIT Layout**



***Photo: 2 SKIT Location Map***

## **Infrastructure:**

### **Library**

The college library is fully automated, SKIT has the huge collection of 26,286 books and a subscription of about 257 e- books for engineering. Library can accommodate 100 students. Internets browsing facility provided in digital library with arrangement of 10 computers to make students learning more easy.

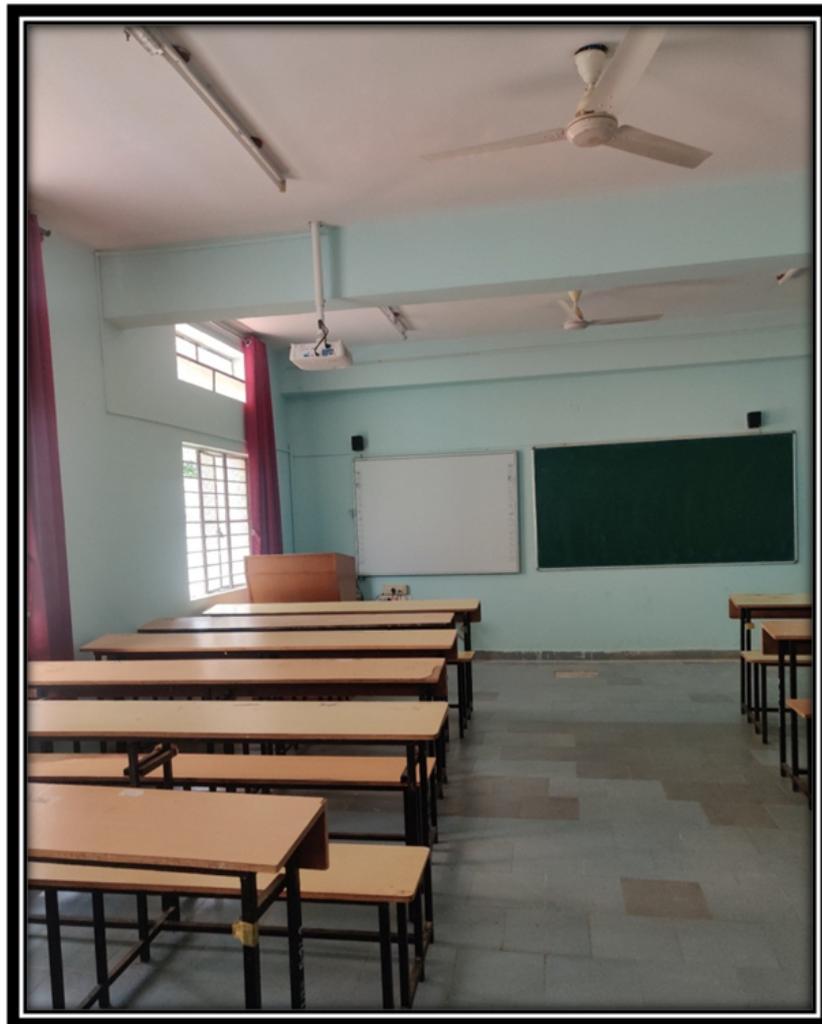


***Photo: 3***



***Photo: 4***

SKIT also has seminar halls in every block for conducting seminars with all the equipment's installed.



**Photo: 5 Seminar Hall**

## Auditorium and Amphitheatre

The Auditorium can accommodate 200-300 students, aimed at conducting events like department functions, club activities and meeting of various support organization.



*Photo: 6*

The amphitheatre can accommodate 500- 800 students, aimed to conduct various academic and extracurricular activities.



*Photo: 7*

## Gymnasium

Gymnasium is provided inside the campus to encourage physical activity among students.

Since the COVID lockdown, the Gymnasium has been closed in line with the COVID protocol guidelines.

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## ATM Facility

ATM facility is provided outside the campus for easy accessibility to the students and staff.



***Photo: 8***

### **3. Water Management**

The main source of water is from bore well. The total consumption of water is around 120 KLD. The major consumption of water is in Common Staffroom, Labs, Canteen, Hostel, Rest Rooms & for Gardening. R.O plant is installed at campus which supplies filter water for drinking purpose only. Keeping in mind that the city is facing water crises, SKIT has dug a bore well and it is self-reliant in its water requirement. The sump capacity of 20 KL is built with pump of 7.5 HP to lift the water to overhead storage tank. To avoid power consumption, overhead tank storage tank of capacity 15 KL is built and 9 syntax tanks of capacity 2KL each are installed. The daily water usage is around 120 KLD depending on the nature of academic activity. The domestic wastewater & the canteen wastewater are collected and disposed through soak pit & septic tank. Rainwater harvesting is also been practiced in the campus at near admin block & block C by storing rain water in a sump (Size: 2.5mt dia & 6mt depth). Also ground water recharge points in campus near admin block at such geographical place, where rain water can easily trapped in it and reach the ground water level. Although campus has canopy of trees, huge botanical garden, lawn in front of the building, for this requirement of irrigation water is huge and it is sufficiently met by the bore well water, but by installing STP at campus, treated water can be used for gardening. Garden is watered by sprinklers system to save water & is one of the steps towards greening practices. Water use is not currently monitored by the SKIT and utility bills are based on both estimates & actual reading.

Less number of leakages is observed at site inspection of infrastructure, still plumbing survey of water supply lines is necessary to stop water supply after occupancy time and to use pressure valves/sensor valves to make control on overflow is necessary. Need of monitoring, controlling overflow is essential and periodically supervision drills should be arranged. In campus reuse & recycle of water system is necessary.

Drinking water & Bore well water analysis report are attached as annexure-1 & 2. The parameters are well within the stipulated limits.



**Photo: 9 Water Storage Tank**



***Photo: 10 R.O.Plant***

### **Rainwater Harvesting**

Rainwater harvesting system has been installed at campus .The rainwater harvesting strengthens the water level of sumps and maintains the ground water recharging process.



***Photo: 11 Rainwater Harvesting***

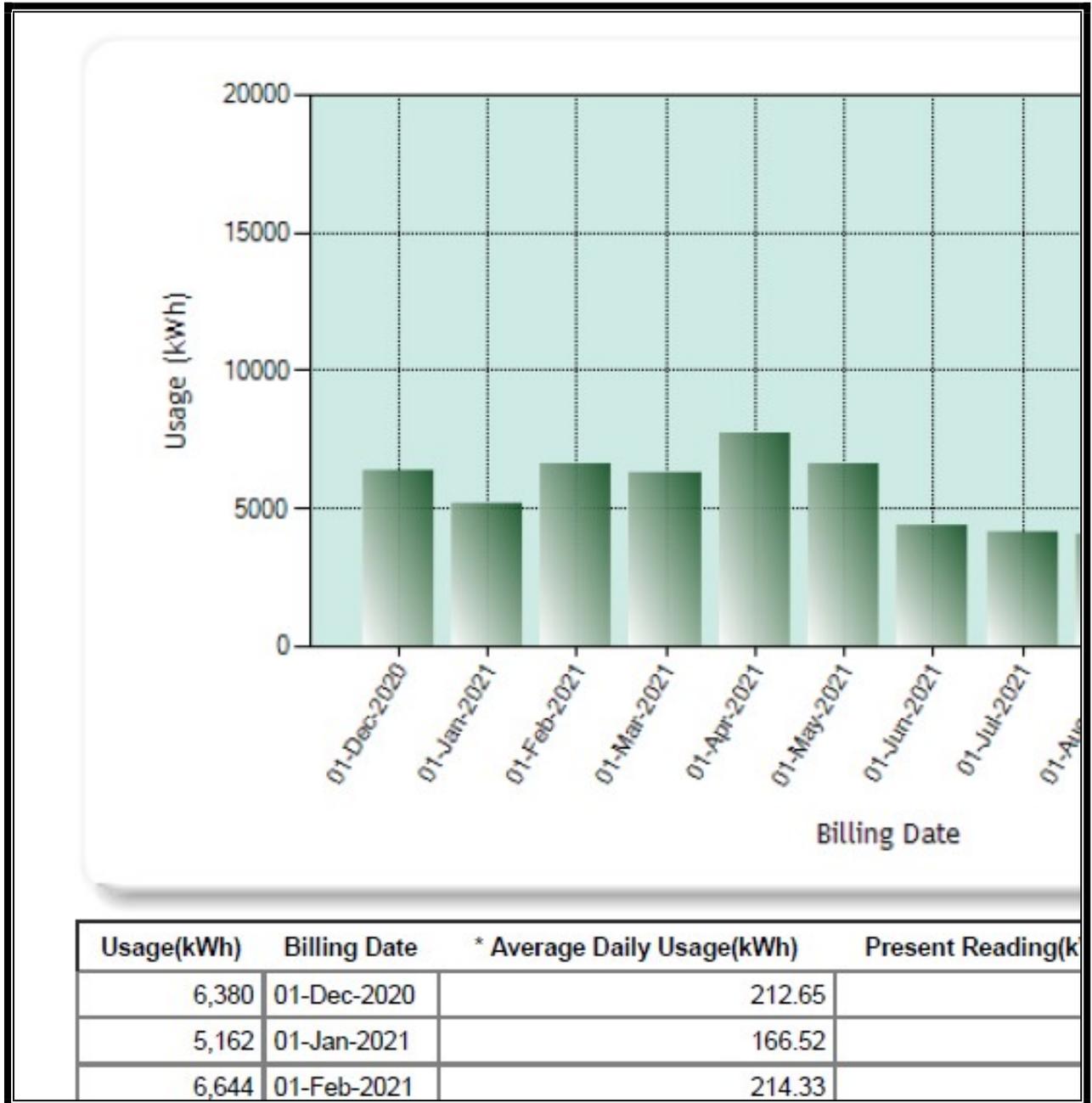
## **4. Energy Management**

Electrical consumption is around 8144.68 kWh/Month which is purchased power drawn from the soladevanahalli. To ensure uninterrupted power, SKIT has installed two generators of capacity 100 KVA and 63 KVA & UPS – 2 No's of 40 KVA, 2 No's of 5 KVA & 1 No of 20 KVA is used for power backup. According to survey all electrical fittings are regularly maintained. The committee members also keep vigilance to avoid unnecessary use of electricity in the college campus. Students & staff are encouraged to switch off lights, monitors & other equipment's. The in house maintenance team carry out lock down of the building at the end of every day and will switch off any lights or equipment's, that have been left on. Since most of the classrooms have cross-ventilation and natural lighting which sufficiently minimizes the use of electricity. Initiatives have been taken to replace the normal lamps and tube lights by CFL & LED. College has purchased "Star rated" electrical appliances to minimize the energy consumption. College have already replaced most of the CRT monitors and DOT matrix printers by, LCD monitors & desk jet printers respectively.

The college is planning to install solar panels in the college campus in near future as of now two numbers of solar street lights are installed at campus. Students and staff members are advised to use the college transport thus avoiding the use of private vehicle.

Ambient air quality, DG stack monitoring, Lux level monitoring are reports are enclosed as annexure -3,4 & 5. Readings are well within the limits.

Annual energy consumption data is listed in table below:



**Table 02: Energy Consumption Data**

## **5. Waste Management**

The waste management is in order with the installation of dust bins. All rooms & common areas contain bins for both general waste and mixed recyclables (plastic bottles, cards, cans and paper). Daily cleaning is carried out and most non-biodegradable waste is lifted by the local municipal service. Due to pandemic the canteen facility is made unavailable in the campus. An average of 28- 35 Kg of food waste is generated per day. It is necessary to adopt environmentally sound practice of converting the food waste from main canteen and mess and other (biodegradable waste) into organic manure. The importance of handling and disposal of hazardous waste is recognized, though the amount of waste is very minimal. The clinical wastes are disposed safely using standard methods and staffs are well trained in this. Various types of chemical wastes are collected and disposed by department of chemistry. Few glass bottles are reused in the laboratories. The obsolete yet working computers, printers and other equipment's discarded by the institute are given to the government schools. The e- waste generated in the campus is collected in a scientific manner & disposed through authorized vendor. Used spent oil is disposed through local vendor. College is taking initiative to make plastic free campus. Very less plastic waste is generated by departments, office etc. but neither categorised at point source nor sent for recycling. Metal waste and wooden waste are stored and given to authorized scrap dealers.



*Photo: 12 Waste Collection Bin*

## **6. Biodiversity**

This includes the flora and fauna present in the campus. Landscaping is well maintained in the campus with garden area of 5435 sq mts. 23 species of various small plant categories as listed in below table are present in the campus.

<b>SL NO</b>	<b>SPECIES</b>	<b>NUMBER</b>
1	COCONUT TREES	10
2	PEEPAL TREE	2
3	JACK FRUIT TREE	4
4	GOOSBERRY TREE	1
5	MANGO TREE	3
6	CHICKOO TREE	1
7	BADAM TREE	2
8	JAMUN TREE	3
9	NEEM TREE	2
10	BANANA PLANTS	20
11	TEAK WOOD	15
12	NILGIRI	2
13	SILVER OAK TREE	70
14	PALM TREE	70
15	MAST TREE	25
16	GOOSE BERRY	1
17	CASHEW NUT	1
18	GAUVA TREE	2
19	SRIGANDHA TREE	2
20	BAMBOO BUSHES	3
21	GOLDEN BOTTLE BRUSH TREE	20
22	BOTTLE BRUSH	120
23	ELANGI	3
24	SMALL PLANTS OF VARIOUS CATEGORY	128

**Table 03: List of Plants in the campus**



***Photo: 13 Landscaping***

## 7. Safety Management

### Safety Measures

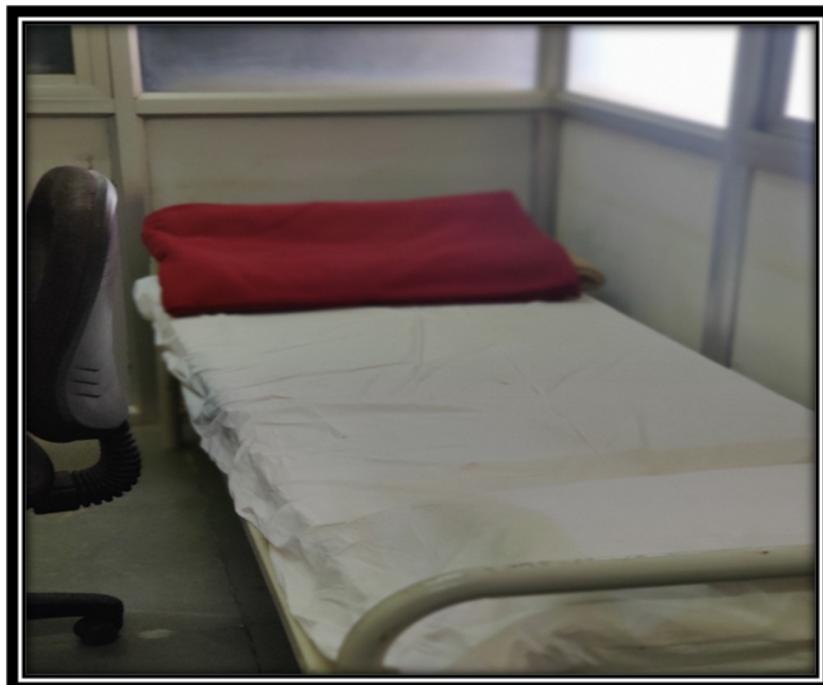
Safety drills are periodically conducted in college for student's safety and emergency preparedness. Each block and floor has fire extinguishers.



*Photo: 14 Fire Extinguishers*

## Health Centre

The Health centre facility is provided in the campus to provide medical aid to students on emergency treatment and preventive care.



*Photo 15. Health Care Centre*

## Sign Boards In The Campus:

Various signage's are displaced in the campus with respect to water conservation, energy conservation and Health and safety



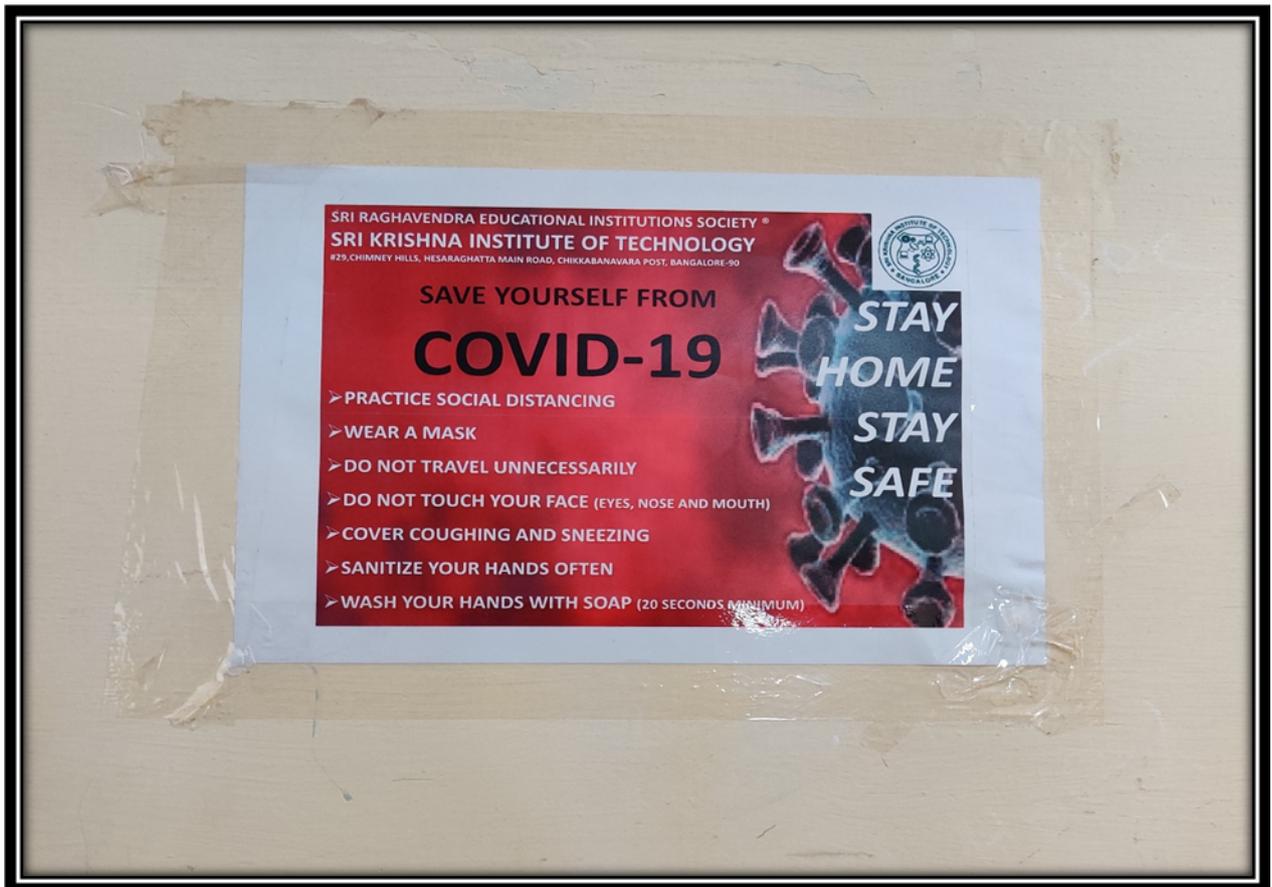
*Photo: 16*



*Photo: 17*



*Photo: 18*



*Photo: 19*

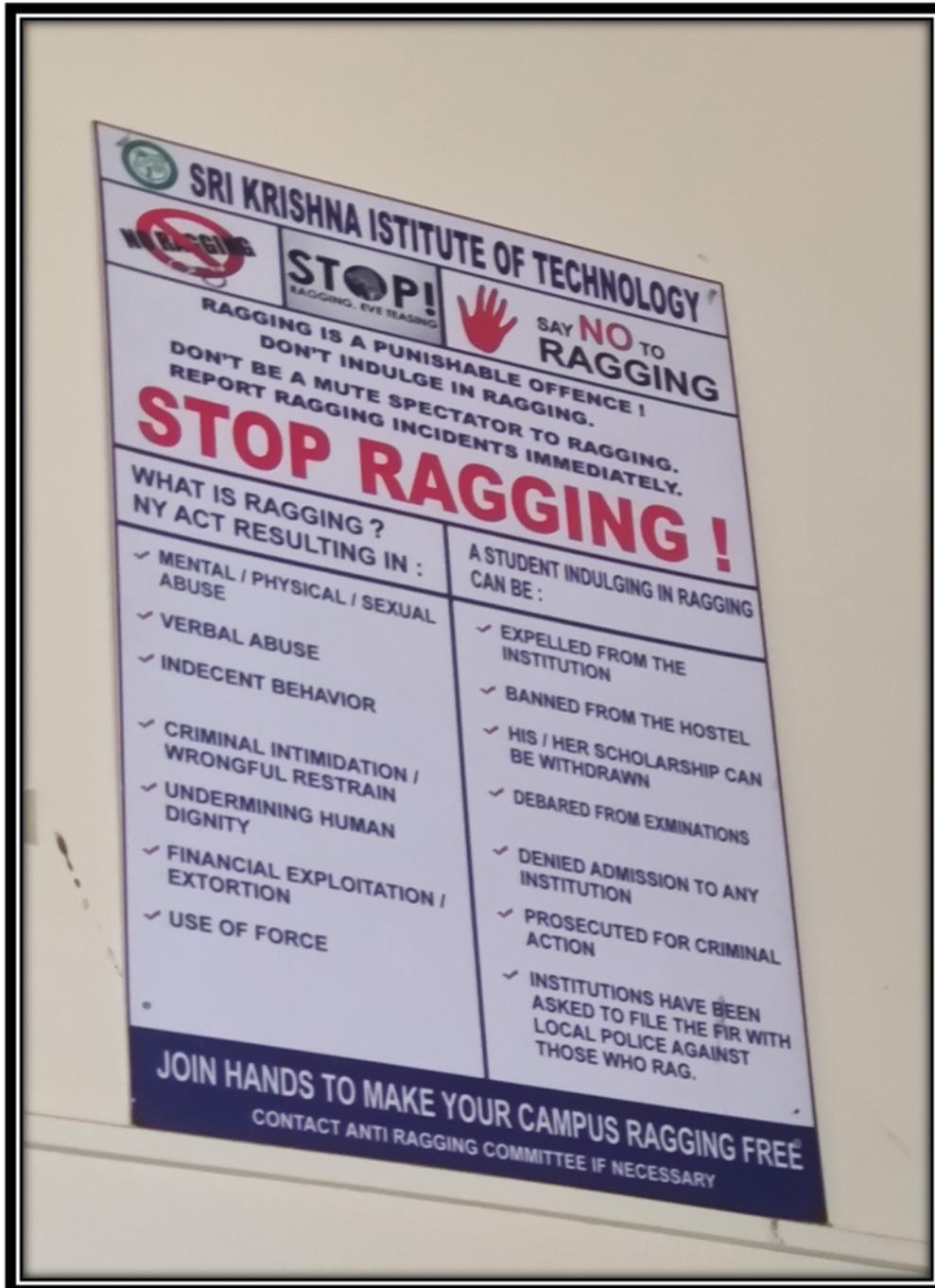


Photo: 20

## Disabled Friendly and Barrier Free Environment

College has provisions of ramp and wheel chairs to assist the disabled students and also provisions of handrails are made in restrooms.



*Photo: 21*

## 8. Green Campus Initiatives

### Awareness programs

Awareness programmes are organised time to time to sensitize students and staff members about energy conservation, environment, public health and environment trending topics such as rally for rivers, swatch bharath andolan, environment day celebration etc. The college has totally banned the use of Tabacco in the college campus and has been declared as free from plastic zone.

Webinars on awareness programme conducted by college:

- 1.Rise for nature- webinar on world environmental day- June 5<sup>th</sup>, 2021
- 2.Electric vehicles- new generation transportation – webinar to avoid carbon foot print – 12<sup>th</sup>October 2021.



Photo: 22

## 9. Summary

Green audit is one of the important tools to check the balance of natural resources and its judicious use. Green auditing is the process of identifying and determining whether institutional practices are eco-friendly and sustainable. It is the process of regular identification, quantification, documenting, reporting and monitoring of environmentally important components in a specified area.

Sri Krishna Institute of technology has conducted "Green Audit" in the academic year of 2020-21. The main objective of green audit is to check the green practices followed by SKIT and to prepare a well – defined audit report.

### **Conclusion**

The following best green practices are observed in the campus.

1. Good maintenance of landscaping.
2. Students are encouraged to make the campus the plastic free zone, which is a good practice.
3. Environmental, Health and Safety awareness signages are displayed appropriately in the campus.
4. Rainwater is collected from rooftop to recharge the ground water level.
5. E waste generated is segregated, handled and disposed properly in an eco-friendly manner.
6. Students are using public transport & also trains are used as railway station is near to the campus for commuting which avoids carbon emissions.

## **Recommendations**

Following are some key recommendations for improving campus environment.

1. Environmentally applicable rules and regulations can be implemented.
2. The options for solid waste reuse and recycle can be considered. Like for food waste, composting can be useful, as the campus has maintained greenery.
3. Install a water meter to record proper water usage in the SKIT premises.
4. Students and staff can be encouraged for more awareness programs.

## **10. Acknowledgement**

ENVIROO WORLD Green Audit Team thanks the management of SKIT for assigning the task of Green Audit. We appreciate the co-operation extended to our team for completion of study.

Our special thanks to:

- Principal of the college – Dr. A. Manjunatha
- Environment Expert at the campus – Mrs. Renuka H R
- Department of Civil Engineering
- Teaching & Supporting Staff of College

For giving us necessary inputs to carry out this vital exercise of Green Audit. We are also thankful to other staff members who are actively involved while collecting the data and conducting field measurements.

# ANNEXURES

## Annexure I: Drinking Water Analysis Report



### NATIONAL ANALYTICAL LABORATORIES AND RESEARCH CENTER

Recognised by MoEF & CC, Certified by ISO 9001:2015 / ISO 45001:2018

No. 1064, 2nd Floor, Rajagopal Nagar Main Road, Near Police Station, 2nd Stage  
Peenya Industrial Area, Bangalore - 560 058. | E - mail : patil.hrb@gmail.com  
Tel : 080 41214555 | Mob : +91 70901 54555

### TEST REPORT

Name & Address of the Customer : M/s. Sri Krishna Institute Of Technology,  
Chimney Hills Bangalore, 29, Hesarghatta Main Rd,  
Chikkabanavara, Bengaluru, Karnataka 560090

Date of Sample Collection : 26/11/2021  
Particulars of sample : Drinking Water  
Sample Qty: 2 Liters+250 ml, Sampling Type: Grab,  
Sampling Point: From Drinking Water Tank

Date of sample Receipt : 26/11/2021  
Sample ID/Code : NALRC/2021/11/W/236  
Date of Analysis Started : 26/11/2021  
Date of completion : 30/11/2021  
Report No : NALRC/2021/11/1142  
Report Date : 30/11/2021  
Page No : 1/2  
Description : Colorless, Odorless, transparent liquid.

Sl No	Parameters	Results	Requirement	Permissible limit	Test Method
			Acceptable Limits	in the absence at alternate source	
(As per IS 10500:2012)					
01	Color, Hazen Units	<5.0	5	15	IS 3025 (P-04)1983 RA 2017
02	Odor	Agreeable	Agreeable	Agreeable	IS 3025 (P-05)2018
03	pH Value	6.9	6.5-8.5	No relaxation	IS 3025 (P-11)1983 RA 2017
04	Taste	Agreeable	Agreeable	Agreeable	IS 3025 (P-08)1984 RA 2017
05	Turbidity, NTU	<0.1	1	5	IS 3025 (P-10)1984 RA 2017
06	Conductivity, $\mu\text{S}/\text{cm}$	114.0	---	---	IS 3025 (P-14)1984 RA 2019
07	Total Dissolved Solids, mg/L	61.0	500	2000	IS 3025 (P-16)1984 RA 2017
08	Total Hardness as $\text{CaCO}_3$ , mg/L	26.0	200	600	IS 3025 (P-21)2009 RA 2019
09	Calcium as Ca, mg/L	7.0	75	200	IS 3025 (P-40)1991 RA 2019
10	Magnesium as Mg, mg/L	2.0	30	100	IS 3025 (P-46)1994RA 2019
11	Chloride as Cl, mg/L	20.0	250	1000	IS 3025 (P-32)1988 RA 2019
12	Total Alkalinity as $\text{CaCO}_3$ , mg/L	22.0	200	600	IS 3025 (P-23)1986 RA 2019
13	Residual Free Chlorine as $\text{Cl}_2$ , mg/L	<0.2	0.2	1.0	IS 3025 (P-26)1986 RA 2019
14	Phenolic compounds as $\text{C}_6\text{H}_5\text{OH}$ , mg/L	<0.001	0.001	0.002	IS 3025 (P-43)1992 RA 2019
15	Boron as B, mg/L	<0.1	0.5	1.0	APHA 23nd Edition4500B B
16	Fluoride as F, mg/L	<0.1	1.0	1.5	APHA 23nd Edition4500F-D
17	Nitrate as $\text{NO}_3$ , mg/L	5.4	45	No relaxation	IS 3025 (P-34)1988 RA 2019
18	Iron as Fe, mg/L	0.1	0.3	No relaxation	APHA 23nd Edition 3500-Fe B
19	Sulphate as $\text{SO}_4$ , mg/L	3.0	200	400	APHA 23nd Edition4500SO <sub>4</sub> <sup>2-</sup> E

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Peenya Industrial Area, Bangalore - 560 058. | E - mail : patil.hrb@gmail.com  
Tel : 080 41214555 | Mob : +91 70901 54555

### TEST REPORT

Name & Address of the Customer : M/s. Sri Krishna Institute Of Technology,  
Chimney Hills Bangalore, 29, Hesarghatta Main Rd,  
Chikkabanavara, Bengaluru, Karnataka 560090

Date of Sample Collection : 26/11/2021  
Particulars of sample : Drinking Water  
Sample Qty: 2 Liters+250 ml, Sampling Type: Grab,  
Sampling Point: From Drinking Water Tank

Date of sample Receipt : 26/11/2021  
Sample ID/Code : NALRC/2021/11/W/236  
Date of Analysis Started : 26/11/2021  
Date of completion : 30/11/2021  
Report No : NALRC/2021/11/1142  
Report Date : 30/11/2021  
Page No : 2/2  
Description : Colorless, Odorless, transparent liquid.

#### Bacteriological Parameters:

Sl No	Parameters	Results	Requirement Acceptable Limits	Permissible limit in the absence at alternate source	Test Method
20	Chromium as Cr <sup>6+</sup> , mg/L	<0.05	0.05	No relaxation	APHA 23 <sup>rd</sup> Edition 3500 Cr <sup>6+</sup> -B
21	Aluminum as Al, mg/L	<0.005	0.03	0.2	APHA 23 <sup>rd</sup> Edition 3120 B:2017 (By ICP-OEC)
22	Manganese as Mn, mg/L	<0.005	0.1	0.3	APHA 23 <sup>rd</sup> Edition 3120 B:2017 (By ICP-OEC)
23	Selenium as Se, mg/L	<0.005	0.01	No relaxation	APHA 23 <sup>rd</sup> Edition 3120 B:2017 (By ICP-OEC)
24	Copper as Cu, mg/L	<0.005	0.05	1.5	APHA 23 <sup>rd</sup> Edition 3120 B:2017 (By ICP-OEC)
25	Zinc as Zn, mg/L	<0.005	5	15	APHA 23 <sup>rd</sup> Edition 3120 B:2017 (By ICP-OEC)
26	Cadmium as Cd, mg/L	<0.003	0.003	No relaxation	APHA 23 <sup>rd</sup> Edition 3120 B:2017 (By ICP-OEC)
27	Total chromium, mg/L	<0.005	0.05	No relaxation	APHA 23 <sup>rd</sup> Edition 3120 B:2017 (By ICP-OEC)
28	Lead as Pb, mg/L	<0.005	0.01	No relaxation	APHA 23 <sup>rd</sup> Edition 3120 B:2017 (By ICP-OEC)
29	Barium as Ba, mg/L	<0.005	0.03	No relaxation	APHA 23 <sup>rd</sup> Edition 3120 B:2017 (By ICP-OEC)
30	Nickel as Ni, mg/L	<0.005	0.02	No relaxation	APHA 23 <sup>rd</sup> Edition 3120 B:2017 (By ICP-OEC)

31	Total coli form Bacteria, MPN/100ml	Not Detected	Shall not be detectable in 100 ml sample	IS 15185 RA 2016
32	Escherichia Coli, MPN/100ml	Not Detected	Shall not be detectable in 100 ml sample	IS 15185 RA 2016

Remarks: -The given sample meets to Acceptable limits as per IS 10500:2012 for above Physico - chemical testing & bacteriological tests.

\*\*\*\*\* End of the Report\*\*\*\*\*

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# Annexure II: Bore Well Water Analysis Report



## NATIONAL ANALYTICAL LABORATORIES AND RESEARCH CENTER

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Peenya Industrial Area, Bangalore - 560 058. | E - mail : patil.hrb@gmail.com  
Tel : 080 41214555 | Mob : +91 70901 54555

### TEST REPORT

Name & Address of the Customer : M/s. Sri Krishna Institute Of Technology,  
Chimney Hills Bangalore, 29, Hesarghatta Main Rd,  
Chikkabanavara, Bengaluru, Karnataka 560090

Date of Sample Collection : 26/11/2021  
Particulars of sample : Borewell Water  
Sample Qty: 2 Liters+250 ml, Sampling Type: Grab,  
Sampling Point: From Borewell Water Tap

Date of sample Receipt : 26/11/2021  
Sample ID/Code : NALRC/2021/11/W/237  
Date of Analysis Started : 26/11/2021  
Date of completion : 30/11/2021  
Report No : NALRC/2021/11/1143  
Report Date : 30/11/2021  
Page No : 1/1  
Description : Colorless, Odorless, transparent liquid

Sl No	Parameters	Results	Requirement	Permissible limit	Test Method
			Acceptable Limits	in the absence at alternate source	
(As per IS 10500:2012)					
01	Color, Hazen Units	<5.0	5	15	IS 3025 (P-04)1983 RA 2017
02	Odor	Agreeable	Agreeable	Agreeable	IS 3025 (P-05)2018
03	pH Value	7.1	6.5-8.5	No relaxation	IS 3025 (P-11)1983 RA 2017
04	Taste	Agreeable	Agreeable	Agreeable	IS 3025 (P-08)1984 RA 2017
05	Turbidity, NTU	<0.1	1	5	IS 3025 (P-10)1984 RA 2017
06	Conductivity, $\mu$ S/cm	1370.0	---	---	IS 3025 (P-14)1984 RA 2019
07	Total Dissolved Solids, mg/L	824.0	500	2000	IS 3025 (P-16)1984 RA 2017
08	Total Hardness as CaCO <sub>3</sub> , mg/L	543.0	200	600	IS 3025 (P-21)2009 RA 2019
09	Calcium as Ca, mg/L	107.0	75	200	IS 3025 (P-40)1991 RA 2019
10	Magnesium as Mg, mg/L	67.0	30	100	IS 3025 (P-46)1994RA 2019
11	Chloride as Cl, mg/L	203.0	250	1000	IS 3025 (P-32)1988 RA 2019
12	Total Alkalinity as CaCO <sub>3</sub> , mg/L	360.0	200	600	IS 3025 (P-23)1986 RA 2019
13	Residual Free Chlorine as Cl <sub>2</sub> , mg/L	<0.2	0.2	1.0	IS 3025 (P-26)1986 RA 2019
14	Phenolic compounds as C <sub>6</sub> H <sub>5</sub> OH, mg/L	<0.001	0.001	0.002	IS 3025 (P-43)1992 RA 2019
15	Boron as B, mg/L	<0.1	0.5	1.0	APHA 23nd Edition4500B B
16	Fluoride as F, mg/L	0.13	1.0	1.5	APHA 23nd Edition4500F- D
17	Nitrate as NO <sub>3</sub> , mg/L	38.7	45	No relaxation	IS 3025 (P-34)1988 RA 2019
18	Iron as Fe, mg/L	0.12	0.3	No relaxation	APHA 23nd Edition 3500-Fe B
19	Sulphate as SO <sub>4</sub> , mg/L	41.0	200	400	APHA 23nd Edition4500SO <sub>4</sub> <sup>2-</sup> E



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*[Signature]*  
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Peenya Industrial Area, Bangalore - 560 058. | E - mail : patil.hrb@gmail.com  
Tel : 080 41214555 | Mob : +91 70901 54555

### TEST REPORT

Name & Address of the Customer : M/s. Sri Krishna Institute Of Technology,  
Chimney Hills Bangalore, 29, Hesarghatta Main Rd,  
Chikkabanavara, Bengaluru, Karnataka 560090

Date of Sample Collection : 26/11/2021  
Particulars of sample : Borewell Water  
Sample Qty: 2 Liters+250 ml, Sampling Type: Grab,  
Sampling Point: From Borewell Water Tap

Date of sample Receipt : 26/11/2021  
Sample ID/Code : NALRC/2021/11/W/237  
Date of Analysis Started : 26/11/2021  
Date of completion : 30/11/2021  
Report No : NALRC/2021/11/1143  
Report Date : 30/11/2021  
Page No : 2/2  
Description : Colorless, Odorless, transparent liquid

#### Bacteriological Parameters:

Sl No	Parameters	Results	Requirement Acceptable Limits	Permissible limit in the absence at alternate source	Test Method
			(As per IS 10500:2012)		
20	Chromium as Cr <sup>6+</sup> , mg/L	<0.05	0.05	No relaxation	APHA 23 <sup>rd</sup> Edition 3500 Cr <sup>6+</sup> -B
21	Aluminum as Al, mg/L	<0.005	0.03	0.2	APHA 23 <sup>rd</sup> Edition 3120 B:2017 (By ICP-OEC)
22	Manganese as Mn, mg/L	<0.005	0.1	0.3	APHA 23 <sup>rd</sup> Edition 3120 B:2017 (By ICP-OEC)
23	Selenium as Se, mg/L	<0.005	0.01	No relaxation	APHA 23 <sup>rd</sup> Edition 3120 B:2017 (By ICP-OEC)
24	Copper as Cu, mg/L	<0.005	0.05	1.5	APHA 23 <sup>rd</sup> Edition 3120 B:2017 (By ICP-OEC)
25	Zinc as Zn, mg/L	<0.005	5	15	APHA 23 <sup>rd</sup> Edition 3120 B:2017 (By ICP-OEC)
26	Cadmium as Cd, mg/L	<0.003	0.003	No relaxation	APHA 23 <sup>rd</sup> Edition 3120 B:2017 (By ICP-OEC)
27	Total chromium, mg/L	<0.005	0.05	No relaxation	APHA 23 <sup>rd</sup> Edition 3120 B:2017 (By ICP-OEC)
28	Lead as Pb, mg/L	<0.005	0.01	No relaxation	APHA 23 <sup>rd</sup> Edition 3120 B:2017 (By ICP-OEC)
29	Barium as Ba, mg/L	<0.005	0.03	No relaxation	APHA 23 <sup>rd</sup> Edition 3120 B:2017 (By ICP-OEC)
30	Nickel as Ni, mg/L	<0.005	0.02	No relaxation	APHA 23 <sup>rd</sup> Edition 3120 B:2017 (By ICP-OEC)

31	Total coli form Bacteria, MPN/100ml	Not Detected	Shall not be detectable in 100 ml sample	IS 15185 RA 2016
32	Escherichia Coli, MPN/100ml	Not Detected	Shall not be detectable in 100 ml sample	IS 15185 RA 2016

Remarks: -The given sample meets to Permissible limits as per IS 10500:2012 for above Physico - chemical testing & bacteriological tests.

\*\*\*\*\* End of the Report \*\*\*\*\*

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## Annexure III: Ambient Air Quality Monitoring Report



### NATIONAL ANALYTICAL LABORATORIES AND RESEARCH CENTER

Recognised by MoEF & CC, Certified by ISO 9001:2015 / ISO 45001:2018

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Peenya Industrial Area, Bangalore - 560 058. | E - mail : patil.hrb@gmail.com  
Tel : 080 41214555 | Mob : +91 70901 54555

### TEST REPORT

Name & Address of the Customer : M/s. Sri Krishna Institute Of Technology,  
Chimney Hills Bangalore, 29, Hesarghatta Main Rd,  
Chikkabanavara, Bengaluru, Karnataka 560090

Particulars of sample : Ambient Air Quality Monitoring  
Name of the Sample Location : Near AMF Panel Room

Date of Sample Collection : 26/11/2021  
Date of Sample Receipt : 26/11/2021  
Sample Code / ID : NALRC/2021/11/ED/428  
Date of Analysis Started : 27/11/2021  
Date of Completion : 01/12/2021  
Report No : NALRC/2021/12/428  
Report Date : 01/12/2021  
Page No : 1/1

#### Instrument used

Instrument Name	PM <sub>2.5</sub>	PM <sub>10</sub>
	Fine Particulate Sampler	Respirable Dust Sampler
Make	Greentech Instruments	Greentech Instruments
Model	GTI-131	GTI-151 BL
Sl No	127-DTC-2017	127-DTC-2017
Instrument Calibrated Date	14/03/2021	17/03/2021
Instrument calibration due Date	13/03/2022	16/03/2022

#### Environmental Conditions

Temperature (°C)	29.0
Humidity (%)	50.0
Climate	Clear Sky
Wind Flow	Normal

#### AMBIENT AIR QUALITY MONITORING RESULTS

Sl No	Parameters	Unit	Results	Standard as per NAAQM	Test Method
1	Particulate Matter (PM10)	µg/m <sup>3</sup>	82.8	100.0 Max	IS 5182 (Part-23) : 2017
2	Particulate matter (PM2.5)	µg/m <sup>3</sup>	26.0	60.0 Max	NALRC/SOP/Air/10 : 2017
3	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	6.8	80.0 Max	IS 5182 (Part 2) : 2017
4	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	30.2	80.0 Max	IS 5182 (Part 6) 2017

Note: BDL: Below Detection Limit

\*\*\*\*\*End of the report\*\*\*\*\*

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## Annexure IV: Stack Monitoring Report for DG



### NATIONAL ANALYTICAL LABORATORIES AND RESEARCH CENTER

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Peenya Industrial Area, Bangalore - 560 058. | E - mail : patil.hrb@gmail.com  
Tel : 080 41214555 | Mob : +91 70901 54555

### TEST REPORT

Name & Address of the Customer : M/s. Sri Krishna Institute Of Technology,  
Chimney Hills Bangalore, 29, Hesarghatta Main Rd,  
Chikkabanavara, Bengaluru, Karnataka 560090

Particulars of Sample Collected : Stack Monitoring  
Name of the Sample Location : Chimney attached to "63 KVA DG SET"

Date of Sample Collection : 26/11/2021  
Date of Sample Receipt : 26/11/2021  
Sample Code / ID : NALRC/2021/11/ED/429  
Date of Analysis Started : 27/11/2021  
Date of Completion : 01/12/2021  
Report No : NALRC/2021/12/429  
Report Date : 01/12/2021  
Page No : 1/1

#### Instrument Used:

Instrument Name	Make	Model	Instrument Calibrated Date	Instrument calibration due Date
Stack Monitoring Kit	Greentech Instruments	GTI-121	17/03/2021	16/03/2022

#### General Details

Date of Monitoring	14/09/2021
Fuel Used	Diesel
Ambient Temperature(°C)	29.0
Stack Diameter(m)	0.04
Quantity of discharge rate in atmosphere(Nm <sup>3</sup> /hr)	35.74

#### STACK MONITORING RESULTS

Parameters	Unit	Result	Limits	Test Method
Flue Gas Temperature	°C	120	N.S	IS:11255(Part-3) 1985 RA:2003
Exit Velocity of gas	(Mts/Sec)	7.9	N.S	IS:11255(Part-3) 1985 RA:2003
Particulate matter	mg/Nm <sup>3</sup>	38.4	150	IS 11255 (Part 1) 1985 RA 2014
Sulphur Dioxide(SO <sub>2</sub> )	mg/Nm <sup>3</sup>	6.9	N.S	IS 11255 (Part 2) 1985 RA 2014
Oxides of Nitrogen (NO <sub>x</sub> )	mg/Nm <sup>3</sup>	42.0	N.S	IS 11255 (Part 7) 2005 RA 2017

Note: 1. N.S: Not Specified,

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# Annexure V: Lux Monitoring Report



## NATIONAL ANALYTICAL LABORATORIES AND RESEARCH CENTER

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Tel : 080 41214555 | Mob : +91 70901 54555

### TEST REPORT

Name & Address of the Customer : M/s. Sri Krishna Institute Of Technology,  
Chimney Hills Bangalore, 29, Hesarghatta Main Rd,  
Chikkabanavara, Bengaluru, Karnataka 560090

Particulars of sample : LUX Monitoring

Date of Collection : 26/11/2021

Date of Sample Receipt : 26/11/2021

Sample Code / ID : NALRC/2021/11/ED/430

Date of Analysis Started : 26/11/2021

Date of Completion : 28/11/2021

Report No : NALRC/2021/11/430

Report Date : 28/11/2021

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### LUX MONITORING RESULTS

Sl No	Sample location	RESULTS (LUX)	Limits
1	Main Library	560	300 Min as per NBC Of India
2	Chemistry Lab	715	

\*\*\*\*\*End of the report\*\*\*\*\*



  
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