



# GREEN AUDIT REPORT



**SRI BHAGAWAN  
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## **Sri Bhagawan Mahaveer Jain First Grade College-KGF**

### **Campus Green Audit**

**Mr. Harisha.k**

#### **ENVIRONMENTAL CONSULTANT**

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<b>Dr. Rekha Sethi</b>	<b>: Eco Club President</b>
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#### ***With Contributions from***

#### **Staff Active Members of Eco Club,**

**Ms. Roselin K,** Head, Department of Bio-Chemistry

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#### **Students Active Members of Eco Club**

<b>Ms. Harshita S</b>	<b>-</b>	<b>III PMCs</b>
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<b>Ms. Kaviyashree M Y</b>	<b>-</b>	<b>II BGB</b>
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# Declaration

We the Principal, faculty, staff and students of **SRI BHAGAWAN MAHAVEER JAIN FIRST GRADE COLLEGE – KGF** are deeply concerned of the fastest scale and movement of pollution, degradation and depletion of resources leading to many environmental problems.

Environmental problems like green house gases, global warming, ozone layer depletion and climate change are the main issues we see, we listen and we talk of that, everywhere at local, national and international levels but we are not serious about resolving the problems. We need to create awareness regarding such issues which threaten the survival of all living beings on this earth including the humans too. These environmental problems have been caused by unsustainable production and consumption patterns and inequitable use of resources across the world.

There is an urgent need to think of such issues globally in a sustainable way adopting green technologies in our life to have a better future for the next generations using equitable and proper resource management in developmental projects.

Environmental challenges can be solved by creating awareness at institutional level. This awareness is needed in education research and policy making to reach our goals towards sustainable environment.

We therefore, agree to take the following actions at our institution for sustainable development:

- 1. Increase Awareness of Environmentally Sustainable Development-** by conducting many programs (local, regional and national) with NGO's or institutions in creating environmental awareness towards sustainable future.
- 2. Create an Institutional Culture of Sustainability-** Encourage all institutions to engage in education, research, policy formation, and information exchange on over population, environmental issues, and developments to move towards global sustainability.
- 3. Educate for Environmentally Responsible Citizenship-** Environmental education is imparted to students in the curriculum to create awareness and make them understand the need to be responsible citizens.

- 4 Foster Environmental Literacy for All-** Create programs on environmental capacity building to develop all students as well as faculty and staff in the college.
- 5 Practice Institutional Ecology-** Maintain environmental responsibility by establishing institutional ecology policies and practices of resource conservation, recycling, waste reduction, and environmentally sound operations.
- 6 Involve All Stakeholders-** Encourage involvement of Government, NGO's, and industry in supporting interdisciplinary research, education, policy formation, and information exchange in environmentally sustainable development to solve environment related issues.
- 7. Collaborate for Interdisciplinary Approaches** - Involve university faculty and administrators with environmental practitioners to develop interdisciplinary approaches in curricula, research initiatives, operations, and outreach activities that support an environmentally sustainable future.
- 8 Enhance Capacity of Primary and Secondary Schools** - Active participation in creating awareness and responsibility in various schools and communities for good and clean environment.
- 9. Broaden Service locally and regionally-** Work with other institutions and NGO's towards adopting environmentally sound practices and promoting eco-friendly activities to conserve the environment.
- 10. Maintain the Movement** – Continuously sustain the balance to inform and support each other's effort towards a sustainable future.

## Acknowledgements

This audit report could not have been completed without the assistance and support of several people on the SBMJFGC Campus. In particular, we need to acknowledge the enormous help provided by all the faculty and students particularly Coordinator and students of Eco Club, SBMJFGC.

This audit could not have been conducted effectively without the active participation and help from various groups of students particularly from the departments of physics and Computer Science. Others on campus who provided valuable information and help include Mr. Tony Lazarus Prem Kumar, HOD, Department of Management Studies and NAAC Coordinator, Mr. Kalai Chalvan, HOD, Department of Physics, Ms. Louisena Vinoth Priya L, HOD, Department of Life Science, Ms. Jean Saldana , Department of English , Mr. Mallikarjuna J R , office staff , Mr. Thangam, Attender, Mr. Harisha K, Environmental consultant has provided guidance, ideas and helpful suggestions to make the audit more complete and robust. Although we were not able to accomplish all the facets of the audit that the experts challenged us to achieve, this audit report has been greatly enhanced by their expertise in environmental auditing, scientific acumen, unfailing persistence and support.

We would like to thank Mr. Harisha. K, Environmental Consultant for both hosting a visit and coming to visit us at SBMJFGC, KGF campus and providing his experience and guidance.

Finally we would like to thank all the members of the SBMJFGC Campus Eco Club group who provided motivation and a critical outlet for this audit to use for future sustainability efforts on campus.

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# Executive Summary

**SRI BHAGAWAN MAHAVEER JAIN FIRST GRADE COLLEGE, KGF** is a leading private Institution of JGI offering Pre-University, Under Graduate, courses in the college.. Latest environmental growth and awareness is created in students, faculty and all staff towards becoming environmentally sound and a more sustainable eco-friendly campus.

The campus is spread over 0.5 acres with indoor green plants inside the building in the campus. The college has nearly 85 faculty, 1767 students, 19 non teaching faculty, 12 housekeeping staff and 6 watchmen's. Education at the college is open to all young boys and Girls irrespective of religion, caste or community. It imparts quality education to the economically and socially backward classes, scheduled castes and scheduled tribe students and also to students from neighboring states of Karnataka and as well as rest of India. University education is provided not only to acquire knowledge but also to inculcate a sound philosophy of life for holistic living. To fulfill these objectives the College strives to create a scholastic environment through effective teaching, curricular and co-curricular activities and democratic disciplining.

The waste management is carried out well by installing dustbins at all floors. As usual daily cleaning is carried out along with weekend cleaning work by NSS and Eco-club Members has kept the routine check on clean campus and all the other red waste generated is disposed safely in the nearby hospital. E-waste is collected and disposed safely at E-Cycle Solution, Bangalore.

Energy audit is carried out and the monthly electricity bill has been reduced by installing LED bulbs at Ground floor and 3 rd floor and conference hall and Auditorium. A solar roof top PV system of 5-10KWp solar grid will be installed in the campus in the upcoming Days. Suggestions are given to reduce minimum power consumption by switching of lights, computers and fans when not in use.

Car pooling, college bus and use of bi-cycle by students in the campus have reduced the carbon emission which has contributed to carbon neutrality to make the institute a green campus.

College is providing significant environmental education, research, awareness both by faculty, students in the departments of Physics and other departments.

These are few milestones of how **SRI BHAGAWAN MAHAVEER JAIN FIRST GRADE COLLEGE KGF** is going Green campus, all documented in this detail report. However, the audit has started to make the institution an eco-friendly and sustainable campus in the coming years to become a model Green Institution.



## Overview of Campus Environmental Audit

**SRI BHAGAWAAN MAHAVEER JAIN FIRST GRADE COLLEGE, KGF** has committed to conservation of environment through sustainable and eco-friendly technologies.

The current environmental audit represents the initial stage in the effort of building a sustainable and eco-friendly campus at SBMJFC. It's true that the definition of sustainable development is defined in various ways, but for this project we define sustainable development as development intended to encompass environment, economy and social issues; but is often compartmentalized as an environmental issue. In its early manifestations, sustainable development was largely a green agenda, or bringing environmental considerations in economic development.

The audit was conducted with the active assistance of

**Mr. Harisha K**, Environmental Consultant

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### Eco Club Staff Active Members

1. **Ms. Roselin K** , HOD of Bio-chemistry
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## Overview of Sri Bhagawan Mahaveer Jain First Grade College,KGF

SBMJC as the 21st constituent in the JGI group was established in the year 2004 with the Degree courses BBA, B.Com, B.A, B.Sc (PMCs, BGB, CBM) with 310 students and PUC with 366 students and till date has crossed several barriers effectively on its way to impart quality education with un disputable physical infrastructure and learning models. The institution completing its 15<sup>th</sup> academic year is looking forward towards taking one more challenge to its stride in providing education with quality and styled to reach the mass with limited time and available resources. Achievements are big enough to be dreamt and successive dreaming leads to achievements accrued over a period of time. The Institution has been able to make remarkable progress in all spheres of the academics and has been able to mark these achievements in academics, event management, academic evaluation and results, quality in leadership, learning outcome with the use of infrastructure, the basic set of guidelines and way of looking at various aspects has made remarkable progress and has seen several changes as days have passed.

Today the institution is providing a quality education, offering from pre-university, graduate, courses to economically and socially backward classes, scheduled castes and scheduled tribe students coming from different parts of the state and also from rest of India. The institution with an illustrious past, marches ahead with long strides having the vision to scale greater heights in the coming years.

**Vision:** To make SBMJC-KGF, a nurturing ground for holistic development of the young minds by providing intellectual nourishment and wholesome education to develop emotional stability and strength to respond creatively to the challenges of a work full of relentless competition.

**Mission:** To develop SBMJC-KGF into a campus of excellence to strive for continuous improvement, to provide quality education, to help students achieve all round development of personality to face the challenges of the competitive world.

## **Ecology of Kolar Gold Fields**

KGF is the 2<sup>nd</sup> biggest city in the Kolar district, is situated in the south-eastern part of the District where as Kolar district is located in the Southern plains region of the state and happens to be the eastern most district of the state of Karnataka. The district is bounded by the districts of the Bangalore in the South-West and Tumkur of the West and in all other sides by the districts of the adjoining states of Andhra Pradesh and Tamil Nadu. On the North it is bounded by Ananthpur district, on the East by Chittoor district of Andhra Pradesh on the South by districts of North Arcot and Dharmapuri of Tamil Nadu.

The city of KGF is unique in nature; most of the large cities in the world are built on the bank of the river or sea. But there are no important barriers such as rivers and mountains which separate this district from the other districts or other states. The general plateau surface is interrupted by number of hills and peaks of varying heights particularly in the North.

The main resource of the district is Gold which occurs along with quartz which in turn occurs as veins and lenses in schist's. More than 99% of the Gold produced in this country use to come from the mines at Kolar Gold Fields. The activity has been stopped for the last 15 years and there is a rethinking on this issue to re-open the same as the gold is fetching good rate in the present market.

At present the sources of water supply in K.G.F City is Bethamangala Tank Water and bore well. But the present water supply is not sufficient for the public due to increased population leading to rapid urbanization and industrialization. Bharath Gold Mines Limited and Bharath Earth Movers Limited are the two major industrial establishments in KGF.

College campus has an area of 0.5acres, which is located in the heart of the KGF city, GPS coordinates (12° 957' N 78°272' E) climatically a well favored City, which is a part of the South Deccan of peninsular India. The highest maximum temperature of 34°C in April/May to the lowest minimum of 15°C in December/January. The mean annual rainfall is 813.3.mm. The average altitude of the City is 840 mts. above the MSL.

# Green Audit

To protect the environment alongside with sustainable growth and eco-friendly development is the mission of the college and growing indoor plants with rich O<sub>2</sub> is the major concern to manage and maintain the greenery. This initiative helped us to beautify our premises in providing a good atmosphere for the academic and non-academic pursuits.

The college is situated in the heart of the city. Green audit is carried out in the campus regularly by the staff, eco-club members periodically supervising in maintaining the green campus by planting new creepers. Environmental education is included in the curriculum of the college.



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Longitude: 78.272243  
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Time: 18-11-2019 15:52  
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## **Waste Management**

In nature we go behind many kinds of waste but in institutions, household and as well as public places we come across different kinds of solid waste, viz. Household waste, plastic waste, hotel waste, E –waste and few organic waste dumped road side has led to various environmental crisis that is reflected in lack of respect towards nature. For this reason, SBMJFGC has adopted various solutions by implementing educational strategies that may help us in managing the waste to their organizing structures. Therefore it is not only about creating awareness in the college through education but it has to be transformed to the society in order to contribute for the improvement of quality life and environment of the people.

### **Solid waste generation and recycling over view**

SBMJFGC has adopted 3 R's-Reduce, Reuse, and Recycle. And it generates waste of about 35% which is of organic in nature. Generally waste comes from cafeteria. The other waste such as the municipal solid waste is very minimum and a very less e-waste is generated in the campus.

### **List of the following waste generated in the institution (college campus)**

<b>SL.NO</b>	<b>TYPES OF WASTE</b>	<b>QUANTITY (Approximate)</b>
1.	Organic waste from cafeteria	3-5Kgs/day
2.	Paper waste	120Kgs/month
3.	Plastic waste	Negligible
4.	e-waste	5-7Kgs/month
5.	Hazardous waste	Nil
6.	Miscellaneous waste	2-3Kgs

### **Installation of waste bins**

To ensure waste free campus to collect, sufficient numbers of waste bins are installed in the campus for appropriate collection on all the floors. Most of the organic waste generated for the cafeteria is sent to municipal waste collector.

Non hazardous solid waste is disposed through garbage truck on daily basis.

### **Campus sweep and cleaning**

Sweeping is usually done every day by the stake holders in the process of campus cleaning which has not only helped in cleaning the campus and also in maintaining a clean

and hygienic environment. In addition to this NSS and ECO CLUB members involve in cleaning the campus during weekends along with this the faculty, staff and students of each department help in cleaning the respective departments during Ayudhapooja festival.

### **E-waste**

E-waste generated in the campus is collected by the Department of Computer Science and disposed using standard procedures in association with E-cycle solutions Bangalore. A total of 80Kg which was generated within the campus as well as e-waste collected by our students from their household was disposed to E-cycle solutions, Bangalore on 12/12/2019. The Department of Computer Science has taken keen interest to carry out this important mission.

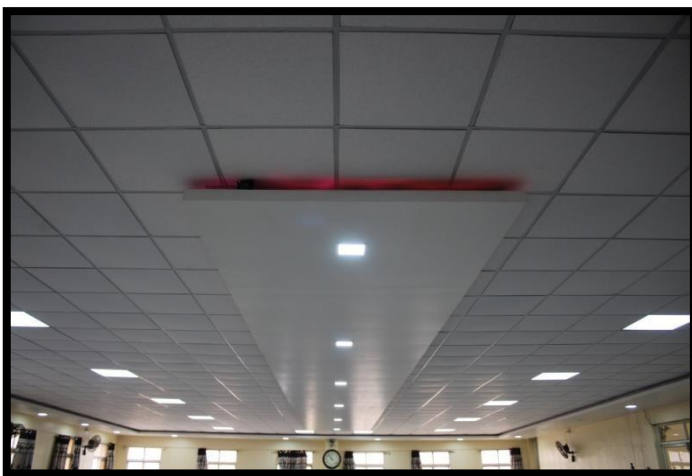


**E-waste collection point in the institution**

# Energy Conservation

Minimal consumption of energy is the saving factor of energy conservation in the campus. The notices near the switch boards prevent wastage of energy. The use of LED bulbs in Ground and 3<sup>rd</sup> Floor instead of tungsten lamps has reduced energy consumption. The team and collaborative work in the same place, using open auditorium, class room, office room and conference room for conducting college functions which are installed with LED bulbs to reduced the energy consumption and the stakeholders have been educated about the danger of natural resources depletion and the need for energy conservation.

SBJMFGC building has Source of electricity from BESCOM and monthly energy consumption was about 6500-6800kWh averagely and used to pay monthly bill around Rs.75000-83000 averagely. So the college decided to go for eco-friendly technology in a sustainable way to install a solar roof top PV system of 5-10KWp GRID in the campus in future to reduce the monthly bill by around 20-30% nearly.



**LED Lights in Conference Hall, Office room and in Class rooms**

# Water and Waste Water Management: Overview

We have only 3% of fresh water on the earth. So it's a resource of more importance to all living organisms including humans. So we have to conserve the water which is limited resource. In urban areas the lake beds and catchments area have been converted to layouts and apartment complexes; this has disturbed the urban hydrological balance. The problem becomes acute when there is no effort to recharge the ground water on one hand and the unrestricted exploitation of ground water by all. **“A Candle burning at both ends”**.

The urban terrain is mostly covered by roads and concrete houses, with very little possibility of rain water percolating into the ground. The slit chocked storm water drains are unable to handle the inflow of rain water, this lead to water logging on the roads due to heavy rains which damages the surface of the roads, which calls for expensive resurfacing every year.

**“Uncertain rain is common, certain rain is rare. We have to be ready to harvest it whenever, wherever and whatever it rains”**

In conserving water educational institutions have a major role to play in minimising water wastage and also in educating students, faculty and staff about the issues of water conservation.

**Water usage-** there are 2 water storage units fixed on the terrace of the institution.

Capacity of the tanks as follows:-

Cement underground tanks in the campus has a capacity of around 15000 L and bore well has been dried up, it's been recharged through rain water harvesting system and water is purchased from the water vendor daily.

Cement tanks

1. 10000 L – 2 Numbers

These tanks are meant to supply water to designated wings of the college in different floors respectively.



## **Waste –water**

Waste water refers to the water discarded after use from the campus. Waste water includes sewerage from the college which includes lavatory, laboratories wash, staff room wash basin, canteen and other coming out of apparatus and ultimately going down the drain. There is a good drainage system well linked to the sewerage lane of the UGD of local Municipality. If any blockages are found occasionally it is attended by the respective authorities concerned.

## **Safe Drinking Water**

Water is one of the main reasons of many infectious diseases. To check this, the students and staff are provided with safe drinking water. RO water filters are fixed at various spots in the college but presently water filtered cans are used in the college.

## **Rain Water-Harvesting**

College has set up a method to harvest the rain water (roof top) in the premises. The water can be easily harvested on the roof top in rainy season with minimum expenditure through a proper channelized into the gravity recharge tank which is connected to the dried up bore well directly.



**Rain Water harvesting structure to recharge the bore well**

## Efforts for Carbon Neutrality

Proper measures have been taken to reduce carbon emission to keep the campus, pollution-free and uncontaminated. The city bus from various places have frequent connectivity to college is used by students and staff to avoid the use of individual vehicles. Car- pooling or share auto system is used by staff for transport and conveyance. Four college buses are there from different areas viz Kolar, Mulbagal, V.Kote and Bangalore has minimized Carbon emission. Small but beautiful greenery is maintained in front of the college. Indoor plants like Golden Pothose, Snake Plant, Weeping Fig, Palm Live Plant etc are maintained in front of the Auditorium and Conference Hall, also in the Open Auditorium to maintain the aesthetic beauty of the institute and to naturally purify the air and provide fresh oxygen and create a congenial atmosphere for the academic and non-academic pursuits has contributed to carbon neutrality in the campus to make the institute a green campus.



**Mode of transportation in the institution**



### **Vertical gardening in the ground floor**

#### **Plantation**

The institution has planted and maintained around 1500+ tree saplings through various initiatives of NSS activities, Eco-club members and other community activities on the cyanide dump to avoid soil erosion.

Besides, the institution is promoting a sense of environmental awareness among students through its An extension activity **Go Green was** organized by B.Com students in Govt High School, BEML Nagar to bring awareness among general public about importance of trees and also planted saplings in the school premises.



### **Collage Competition on Go Green and Save Water**



**Planting Saplings on the cyanide Dump**

### **Cotton Day**

“Cotton Day”- every Saturday, the students, staff and stakeholders wear cotton dresses.

We are open to all individuals and organizations to collaborate for strengthening the Environmental sustainability and eco-friendly technologies.

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**FEED BACK** : **Satisfactory / ~~Need to Improve~~**

### **Recommendations**

Following are some of the key recommendation for improving campus Environment:

1. Conduct switch off drills at regular intervals and fix its responsibility on teaching / non teaching staff.
2. Provide energy efficient heating systems, with adjustable controls for individual heating appliances wherever possible, and ensure that comprehensible instructions are available to staff and students on the use of heating controls (Especially for science building section
3. Institution has to carry out annual Water Audit that will help to save water in upcoming future. Responsibility of monitoring the overflows of water tank is fixed on peons/ non -teaching staff in the concerned section
4. Save electricity by proper maintenance of the wiring and electrical equipment, maintenance of electrical appliance and fitting is essential.
5. Preference is already given to the most energy efficient and environmentally light appliances such as energy-saving CFL and LED bulbs and LED tubes with reflectors but in some section old incandescent bulbs, Tubes are in working replace these on priority base.
6. Adopt solar grid to use renewable clean energy in the campus to attain sustainability
7. Biodegradable wastes from cafeteria has to be composted it.
8. Sufficient big waste bins are placed where essential (in classroom, near office etc) and monitored periodically.
9. College has to purchase recycled resources where they are both suitable and available.
10. Use the facility of counter of any bank for bank mode payment

11. At science laboratories large amount of water wasted during the process practical, design small water recycle system for science laboratory.
12. An environmental Green policy has to be prepared with all the conclusions, recommendations and current green practice carried by college.
13. A frequent visit should be conducted to ensure that the generated waste is measured, monitored and recorded regularly in a ledger and information should make available from concerned staff.
14. The waste should be reused or recycled at maximum possible places.
15. Glass waste should be disposed properly and send it for recycle.
16. Reduce chemical wastes formation in chemistry laboratory. Adopt the principles of green chemistry to reduce chemical wastes
17. A proper method of disposal / recycle to be followed for hazardous waste treatment.
18. Pipes, overhead tanks and plumbing system should be maintained properly to reduce leakages and wastages.
19. Start an E-banking suvidha for admissions, examination, paying money as experimental for one of faculty.
20. The college should develop internal procedures to ensure its compliances with environmental legislation and responsibility should be fixed to carry out it in practice.

DATE: 12-12-2019

*Harisha . K*

SIGNATURE

ENVIRONMENTAL CONSULTANT  
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