

GREEN, ENERGY AND ENVIRONMENTAL AUDIT REPORT



**Sivananda Sarma Memorial RV College
(SSMRV)
Jayanagar, Bengaluru**

Audit Conducted and Submitted by



ABOUT COLLEGE

Sivananda Sarma Memorial RV College (SSMRV), popularly known as SSMRV College is affiliated to Bengaluru City University and recognised by UGC under 2(f) and 12B. Established in 1940, RV Group of Educational Conglomerate is one of India's largest educational conglomerates with over 20 institutions and 20,000+ students.

It was founded by Sri. M. C. Sivananda Sarma, a prominent freedom fighter, educator, and administrator. He was a firm believer in the power of education and wanted to make it accessible to all. Thanks to his immense hard work, today, RV is at the forefront of research, innovation, and learning — empowering young minds to scale new heights!

The college offers undergraduate Commerce, Business Administration and Computer Applications and post graduate courses in Commerce.

GREEN AUDIT

A Green Campus Audit for a college focuses on creating an environmentally conscious and sustainable infrastructure within the cityscape. This evaluation ensures that the college campus integrates eco-friendly practices amidst the urban environment to reduce energy consumption, promote water conservation, minimize pollution, and lower carbon emissions.

In this context, the Green Campus Audit becomes a systematic tool for managing the college's environment, emphasizing sustainability, and nurturing an eco-friendly culture within the city. The goal is to blend environmentally sound practices with education, encouraging sustainable behaviors and integrating user-friendly technology within the campus.

To achieve this, the audit emphasizes maintaining a green landscape within the urban setting, encompassing a diverse array of trees, plants, lawns, and shrubs. This reduces pollution and aids in conserving biodiversity, managing landscapes, implementing proper water irrigation, and preserving natural topography within the city environment.

Moreover, the audit encompasses waste management strategies, including water recycling, proper sewage disposal, electronic waste, biomedical waste, and minimizing plastic usage. These practices contribute significantly to maintaining a clean and healthy environment for everyone involved within the urban college setting.

The procedures for the Green Campus Audit are aligned with recognized environmental standards such as ISO 14001:2015, the Indian Green Building Council, and initiatives like the Swachh Bharat Scheme, integrating the best practices from these frameworks into the urban college's sustainability initiatives. Overall, the mission of this Green Campus Audit within a college setting is to ensure a sustainable and eco-friendly campus and serve as a model for the community, contributing to the city's environmental well-being and improving the quality of life for its residents.

OBJECTIVES OF GREEN AUDIT

In recent years, the significance of a Green Audit for institutions has surged, marking their commitment to addressing pressing environmental concerns. From its inception, our institution has maintained a strong focus on preserving a clean environment. The present Green Audit aims to comprehensively assess, quantify, and prioritize an environmental sustainability framework in alignment with relevant regulations, policies, and standards.

The primary objectives of conducting a Green Audit are as follows:

Raising Stakeholder Awareness: Instilling a profound understanding among stakeholders regarding environmental degradation and the imperative need for conservation. This aligns with the institution's adherence to environmental management Systems and Environmental Legislation.

Establishing Baseline Information: Creating a foundational understanding of the current eco-friendly landscape within the campus for future sustainability initiatives. This provides stakeholders with a clear reference point for progress evaluation.

Linking Flora and Fauna to Sustainability: Recognizing the interdependence of biodiversity with environmental sustainability at audit sites. This fosters a healthy atmosphere for all institution stakeholders.

Resource Utilization Minimization: Implementing policies such as 'Water Conservation Policy', 'Waste Management Policy', and 'Green Campus and Environment Policy' to actively reduce resource consumption. These policies guide the institution toward sustainable practices and efficient resource management.

The Green Audit stands as a testament to the institution's commitment to environmental responsibility, aiming to meet regulatory requirements and foster a culture of sustainability among all stakeholders.

Enumeration of Trees and Flowering Plants

Trees serve as natural carbon dioxide sinks, absorbing and storing carbon through photosynthesis in their biomass. Their growth and carbon storage impact various environmental factors, including local climate, carbon cycles, air temperature, climate change dynamics, energy usage, and emission alterations.

Within the SSMRV campus, diverse tree species contribute minimally to storing substantial biomass and environmental health. Presently, the campus hosts a limited number of trees but holds the potential for a small plantation area.

To gauge the carbon sequestration capacity of the campus, trees with a minimum circumference of 10cm were meticulously counted and assessed.

Data Collection Methodology:

A comprehensive study was conducted involving detailed ecological and taxonomic enumeration of trees and flowering plants across the SSMRV Campus. Each identified tree and flowering plant was meticulously documented, capturing their distinctive features and characteristics.

This extensive data collection process not only cataloged the existing flora but also laid the groundwork for evaluating the campus' carbon sequestration potential. The study aimed to assess their collective impact on carbon sequestration within the campus environment by understanding the composition and characteristics of the trees and flowering plants.

There a total of 8 species of trees and 20 species of flowering plants within the SSMRV campus. The eight species of tress is comprised of 23 individual trees. The table below presents the descriptions of the identified species including their scientific names, common names, IUCN Status, wood density and abundance in terms of individual counting.

Sl.No.	SCIENTIFIC NAME	COMMON NAME	IUCN STATUS	Number of Trees	Wood Density
1	Mangifera indica	Mango Tree	Not Evaluated	3	0.55
2	Terminalia catappa	Indian Almond	Least Concern	1	0.52
3	Millettia pinnata	Pongam	Least Concern	6	0.73
4	Bauhinia variegata	Orchid Tree	Least Concern	6	0.6
5	Ficus lyrata	Fiddle Leaf Fig	Least Concern	3	0.12
6	Ficus religiosa	Peepal Tree	Least Concern	4	0.51
7	Simarouba glauca	Paradise Tree	Least Concern	1	0.3
8	Heptapleurum actinophyllum	Umbrella Tree	Least Concern	1	0.2

TREES

1. Mango/*Mangifera indica*

Mangifera indica, commonly referred to as mango, belongs to the *Anacardiaceae* family and is recognized as a sizable fruit-bearing tree capable of reaching heights up to 30 meters. Modern mangoes encompass two distinct genetic populations: the “Indian type” and the “Southeast Asian type”.

Beyond its reputation as a fruit-bearing tree, *Mangifera indica* holds significance for its medicinal applications. Various parts of the plant serve as a dentifrice, antiseptic, astringent, diaphoretic, stomachic, vermifuge, tonic, laxative, and diuretic. Its therapeutic uses extend to treating conditions such as diarrhea, dysentery, anemia, asthma, bronchitis, cough, hypertension, insomnia, rheumatism, toothache, leucorrhoea, bleeding, and piles. The multifaceted applications of *Mangifera indica* in both horticulture and traditional medicine underscore its importance and versatility across different domains.



2. Indian almond/*Terminalia catappa*

Terminalia catappa, a substantial tree within the *Combretaceae* family, is native to Asia, Australia, the Pacific, and Madagascar. This tree, known by various English names such as country almond, Indian almond, Malabar almond, sea almond, tropical almond, beach almond, and false kamani, thrives in tropical climates.



The medicinal potential of *Terminalia catappa* is noteworthy. It offers several health benefits, including:

- Anti-Inflammatory Properties:** Known for its ability to reduce inflammation, contributing to overall well-being.
- Supports Weight Loss:** Contains properties that aid in weight management, complementing a healthy lifestyle.
- Brain Health Promotion:** Offers support for cognitive health, contributing to brain function.
- Constipation Prevention:** Known to assist in preventing constipation and promoting digestive health.

The multifaceted medicinal uses of *Terminalia catappa* underscore its significance as a valuable resource in traditional and alternative medicine across various regions where it thrives.

3. Pongam/Millettia pinnata

Millettia pinnata, a member of the Fabaceae family and recognized by the synonym *Pongamia pinnata*, is a significant tree species native to eastern and tropical Asia, Australia, and various Pacific islands. Commonly known as Indian beech or Pongame oil tree, it holds a notable place due to its medicinal properties.

This tree's medicinal utility spans various applications:

Traditional Remedies: *Millettia pinnata* has been utilized as a crude drug in conventional medicine for addressing ailments such as tumors, piles, skin diseases, and ulcers.

Root Benefits: The roots are particularly valued for their effectiveness in treating gonorrhea, cleansing gums, and teeth, and addressing ulcers, vaginal issues, and skin ailments. The diverse medicinal uses of *Millettia pinnata* highlight its historical importance as a natural remedy across different cultures. Its applications in traditional medicine underscore its significance as a valuable resource for therapeutic purposes.



4. Orchid tree/Bauhinia variegata

Bauhinia variegata, a member of the Fabaceae family and commonly referred to as the orchid tree or mountain ebony, thrives in regions stretching from China through Southeast Asia to the Indian subcontinent. This flowering plant stands out for its diverse applications in traditional medicine systems, offering a range of medicinal benefits.



The medicinal attributes of *Bauhinia variegata* encompass various properties:

Holistic Healing: Recognized in traditional medicine for its multifaceted therapeutic capabilities. **Health Benefits:** Known to possess antibacterial, antidiabetic, analgesic, anti-inflammatory, anti-diarrheal, anticancerous, nephroprotective, and thyroid hormone regulating activities. The extensive array of medicinal properties associated with *Bauhinia variegata* underscores its significance as a natural remedy in traditional healing practices. Its diverse pharmacological attributes highlight its potential as a valuable resource in natural medicine.

5. Fiddle fig tree/*Ficus lyrata*

Ficus lyrata, popularly known as the fiddle-leaf fig, belongs to the Moraceae family and is indigenous to the lush western African regions, flourishing from Cameroon west to Sierra Leone within lowland tropical rainforests. This remarkable species is characterized by its potential medicinal properties, offering a range of therapeutic benefits.

The medicinal applications of *Ficus lyrata* encompass treatment for various disorders:

Gastrointestinal Support: The fruit, root, and leaves have been historically utilized to address gastrointestinal issues such as colic, indigestion, loss of appetite, and diarrhea. **Respiratory Health:** Known to relieve sore throats, coughs, and bronchial problems within the realm of respiratory disorders. **Inflammatory and Cardiovascular Conditions:** Historically used to manage inflammation and cardiovascular health conditions. The multifaceted medicinal attributes of *Ficus lyrata* shed light on its potential contributions to traditional medicine. Its historical use in addressing a spectrum of health concerns emphasizes its significance in natural healing practices.



6. Peepal/*Ficus religiosa*

Ficus religiosa, known as the sacred fig or bodhi tree, originates from the Indian subcontinent and Indochina and belongs to the Moraceae family. Revered under various names like pippala, peepul, pipal, or ashvattha, this tree boasts a rich medicinal legacy deeply rooted in traditional practices.

Its medicinal applications span:

Cardiovascular Health: Historically, Peepal tree leaves aid in heart ailments, supporting cardiovascular wellness. **Holistic Remedies:** Used traditionally for diverse conditions like nose bleeds, diabetes, constipation, fever, and jaundice. **Jaundice Relief:** A simple mix of a few peepal leaves' extract with water and a hint of sugar, taken twice daily, alleviates jaundice symptoms. *Ficus religiosa*'s historical significance in traditional medicine highlights its role as a natural remedy across cultures, offering diverse health benefits.



7. Paradise tree/*Simarouba glaucae*

Simarouba, a plant native to the Caribbean islands and northern South America, has a long history of medicinal use primarily sourced from its bark. It is highly valued for its effectiveness in addressing various health concerns including diarrhea, dysentery, malaria, edema (water retention), fever, and gastrointestinal discomfort. Additionally, it is recognized as a tonic, contributing to overall wellness.



9. Umbrella tree/ *Heptapleurum actinophyllum*

Heptapleurum actinophyllum, a tree within the Araliaceae family, is indigenous to the lush tropical rainforests and gallery forests spanning northern and northeastern Queensland coasts, the Northern Territory of Australia, as well as regions in New Guinea and Java.



In contemporary medicinal practices, *Heptapleurum* finds application in addressing diverse health issues such as rheumatoid arthritis, limb numbness, abdominal discomfort, headaches, arthralgia, swollen or sore throats, and asthma relief. Moreover, when used externally, it can be transformed into a paste that aids in the treatment of injuries and serves as a hemostatic agent to halt bleeding.

FLOWERING PLANTS

SL. No.	Common Name	Scientific Name
1	Broadleaf lady palm	Rhapis excelsa
2	Weeping fig	Ficus benamina
3	Banana-leaf fig	Ficus maclellandii
4	Arroehead plant	Syngonium podophyllum
5	Yellow bird of paradise flower	Strelitzia reginae
6	Golden palm plant/areca palm	Dypsis lutescens
7	Peace lily	Spathiphyllum
8	Oleander	Nerium oleander
9	Cape Honeysuckle	Tecoma capensis
10	Balfour aralia	Polyscias scutellaria
11	Xandu	Thaumatophyllum xandu
12	Dwarf umbrella	Schefflera arboricola
13	Drago	Dracaena marginata
14	Corn plant	Dracaena fragrans

Sl.No.	Common Name	Scientific Name
15	Mauritus hemp	Mauritus hemp
16	Silver bay	Aglaonema commutatum
17	Dumb cane	Dieffenbachia
18	Copperleaf	Copperleaf
19	Red hot cat's tail	Acalypha hispida
20	Mexican pepper leaf	Piper auritum

1. Broad leaf lady palm/*Rhapis excelsa*

Rhapis excelsa, also known as broadleaf lady palm or bamboo palm, is a species of fan palm in the genus *Rhapis*, probably native to southern China and Taiwan. It is not known in the wild; all known plants come from cultivated groups in China.

Medicinal Uses: The plant has proven successful in removing airborne toxins within the home, including ammonia, formaldehyde, xylene, and carbon dioxide. Unlike other plants, who simply make oxygen, *Rhapis excelsa* will actually make the air in your home cleaner and safer to breathe.



2. Weeping fig/*Ficus benjamina*

Ficus benjamina, commonly known as weeping fig, benjamin fig or ficus tree, and often sold in stores as just ficus, is a species of flowering plant in the family Moraceae, native to Asia and Australia. It is the official tree of Bangkok.

Medicinal Uses: Its latex and some fruit extracts are used by indigenous communities to treat skin disorders, inflammation, piles, vomiting, leprosy, malaria, nose-diseases and cancer besides the use as a general tonic. The plant is also used as antimicrobial, antinociceptive, antipyretic, hypotensive and anti-dysentery remedy.



3. Banana leaf fig/*Ficus maclellandii*

Banana leaf fig is an evergreen tree in the Moraceae (fig) family native to India, Southeast Asia and China. It is commonly grown as a houseplant in temperate climates. The most popular one found for sale is the cultivar 'Alii' which is sometimes sold with a braided trunk.

Medicinal uses: These polyphenols battle all the free radicals in the body and prevent diseases. Banana leaf is also rich in polyphenol oxidase which is an enzyme to treat Parkinson's disease. Banana leaves also have peculiar anti-bacterial properties that can kill germs in the food and aids proper digestion.



4. Arrowhead plant/*Syngonium podophyllum*

Syngonium podophyllum is a species of aroid that is a popular houseplant. Common names include: arrowhead plant, arrowhead vine, arrowhead philodendron, goosefoot, nephthytis, African evergreen, and American evergreen.

Medicinal Use: The tubers were made into a decoction for treating indigestion, rheumatism or as a diuretic for urinary and kidney ailments. The tubers were also used as a poultice for treating wounds and sores.



5. Yellow bird of paradise/*Strelitzia reginae*

Yellow bird of paradise is an upright, fast growing shrub originating from Argentina and Uruguay. Clusters of bright yellow flowers with long red stamens are produced in the summer. Its natural growth habit is irregular and open, but pruning will encourage dense growth.

Medicinal Use: The juice from the leaves is said to cure fever, the juice from the flower cures sores, and the seeds cure bad cough, breathing difficulty, and chest pain. Four grams from the root is also said to induce abortion in the first trimester of pregnancy.



6. Golden palm plant/*Dyopsis lutescens*

Dyopsis lutescens, also known as golden cane palm, areca palm, yellow palm, butterfly palm, or bamboo palm, is a species of flowering plant in the family *Arecaceae*, native to Madagascar.

Medicinal Uses: According to one study by the University of Vermont, plants like areca palm help in reducing anxiety by 37 percent, depression by 58 percent, and fatigue by 38 percent, thereby increasing productivity and positivity.



7. Peace lily/Spathiphyllum

Spathiphyllum is a genus of about 47 species of monocotyledonous flowering plants in the family Araceae, native to tropical regions of the Americas and southeastern Asia. Certain species of Spathiphyllum are commonly known as spath or peace lilies.

Medicinal Uses: It helps filter the indoor air, increase the levels of humidity, helping you breathe better.



8. Oleander/Nerium oleander

Nerium oleander, most commonly known as oleander or nerium, is a shrub or small tree cultivated worldwide in temperate and subtropical areas as an ornamental and landscaping plant. It is the only species currently classified in the genus Nerium, belonging to subfamily Apocynoideae of the dogbane family Apocynaceae.

Medicinal Uses: Despite the danger, oleander seeds and leaves are used to make medicine. Oleander is used for heart conditions, asthma, epilepsy, cancer, painful menstrual periods, leprosy, malaria, ringworm, indigestion, and venereal disease; and to cause abortions.



9. Cape honeysuckle/*Tecoma capensis*

Tecoma capensis, the Cape honeysuckle, is a species of flowering plant in the family Bignoniaceae, native to southern Africa. Despite its common name, it is not closely related to the true honeysuckle.

Medicinal Uses: In southern Africa, the bark of the Cape Honeysuckle is used as medicine to relieve pain and to treat sleeplessness, bronchitis, fevers, and dysentery. They treat bleeding gums by rubbing dried powdered bark on their teeth. The leaves are used to treat diarrhea and gastroenteritis.



10. Balfour aralia/*Polyscias scutellaria*

Polyscias balfouriana, known as Balfour aralia or dinner plate aralia, is a species in the family Araliaceae. The species is native from New Guinea to Queensland, Australia. It is a bushy shrub. Leaves are alternate and have long petioles.

Medicinal Uses: It has a long medicinal history and is widely used in the treatment of various diseases, such as hepatitis, rheumatoid arthritis, bruises, lumps and carbuncles.



11.Xandu/*Thaumatococcus xandu*

Thaumatococcus xandu is a perennial plant belonging to the arum family Araceae and the genus *Thaumatococcus*, formerly classified under the *Meconostigma* subgenus of *Philodendron*. This plant is native to Brazil, but is widely cultivated as a landscape plant in tropical, subtropical and warm temperate climates.

Uses: Xandu can absorb radiation, release oxygen and purify air at the same time.



12.Dwarf umbrella tree/*Schefflera arboricola*

Schefflera arboricola is a flowering plant in the family Araliaceae, native to Taiwan and Hainan Province, China. Its common name is dwarf umbrella tree, as it resembles a smaller version of the umbrella tree, *Schefflera actinophylla*. Current taxonomy places both species in the genus *Heptapleurum*.

Medicinal Uses: According to the concepts of traditional Chinese medicine, schefflera has bitter, sweet and warm properties, and is associated with the Liver meridian. Its main functions are to promote the circulation of the blood and to alleviate pain. sore and/or swollen throat. It can also help to relieve asthma.



13. Dragon tree/*Dracaena marginata*

Dracaena draco, the Canary Islands dragon tree or drago, is a subtropical tree in the genus *Dracaena*, native to the Canary Islands, Cape Verde, Madeira, western Morocco, and is thought to be introduced in the Azores. Its closest living relative is the dragon blood tree of Socotra, *Dracaena cinnabari*.

Medicinal Uses: It has got several therapeutic uses: haemostatic, antidiarrhetic, antiulcer, antimicrobial, antiviral, wound healing, antitumor, anti-inflammatory, antioxidant.



14. Corn plant/*Dracaena fragrans*

Dracaena fragrans, is a flowering plant species that is native throughout tropical Africa, from Sudan south to Mozambique, west to Côte d'Ivoire and southwest to Angola, growing in upland regions at 600–2,250 m altitude. It is also known as striped dracaena, compact dracaena, and corn plant.

Medicinal Uses: It is used for the treatment of cystitis, edema, kidney stones, diuretic, prostate disorder, and urinary infections as well as bedwetting and obesity. It soothes and relaxes the lining of the bladder and urinary tubules, hence reducing irritation and increasing urine secretion.



15. Mauritius hemp/*Furcraea foetida*

Furcraea foetida is a species of flowering plant native to the Caribbean and northern South America. It is widely cultivated and reportedly naturalized in many places.

Medicinal Uses: An infusion with sweet oil is drunk as a treatment for syphilis. The root is mixed with gin and used as a treatment for back pain. The leaves are febrifuge. They are used in a preparation with molasses or honey to treat children's obstinate colds.



16. Silver bay/*Aglaonema commutatum*

Aglaonema Silver Bay is a type of Chinese evergreen plant grown for the silver patterns on its leaves. It is an excellent plant to grow in homes with lower light conditions and even offices. This plant is not too pretentious when it comes to growing requirements, but it is sensitive to cold and poor-draining soils.

Uses: *Aglaonema Silver Bay* is also a good choice for those looking for air-purifying plants. According to a NASA study, *Aglaonemas* can remove benzene and formaldehyde from the air inside your home. Silver Bay is easy to match with any décor.



17. Dumb cane/Dieffenbachia

Dieffenbachia, commonly known as dumb cane or leopard lily, is a genus of tropical flowering plants in the family Araceae. It is native to the New World Tropics from Mexico and the West Indies south to Argentina.

Medicinal Uses: seguine is a popular ornamental, especially those forms with variegated leaves. The sap is used in tropical America as an antidote (counter-irritant) against snakebites, and to treat rheumatism and gout externally. It is also used to treat tumours and warts. The seed oil is applied on wounds, burns and inflammations.



18. Copperleaf/Acalypha wilkesiana

Acalypha wilkesiana, common names copperleaf and Jacob's coat, is an evergreen shrub growing to 3 metres high and 2 metres across. It has a closely arranged crown, with an erect stem and many branches. Both the branches and the leaves are covered in fine hairs.

Medicinal Uses: Copperleaf is native to Fiji and neighboring South Pacific islands, widely cultivated in India. Medicinal uses: *Acalypha wilkesiana* ointment is used to treat fungal skin diseases.



19. Red hot cat's tail/*Acalypha hispida*

Acalypha hispida, the chenille plant, is a flowering shrub which belongs to the family Euphorbiaceae, the subfamily Acalyphinae, and the genus *Acalypha*. *Acalypha* is the fourth largest genus of the family Euphorbiaceae, and contains many plants native to Hawaii and Oceania.

Medicinal Uses: Leaf poultice used for leprosy. In Malaya, decoction of leaves and flowers taken internally as laxative and diuretic for gonorrhoea. Bark used as expectorant and for asthma. In Africa, bark root used for pulmonary problems; leaf for leprosy, and flower for kidney ailments and as diuretic.



20. Mexican pepper leaf/*Piper auritum*

Piper auritum is an aromatic culinary herb in the pepper family Piperaceae, which grows in tropical Central America. Common names include hoja santa, yerba santa, hierba santa, Mexican pepperleaf, acuyo, tlanepa, anisillo, root beer plant, Vera Cruz pepper and sacred pepper.

Medicinal Uses: *auritum* and other plants in the *Piper* genus have been the subject of several pharmacological studies. This research has indicated antifungal, antibacterial, anti-inflammatory, anti-cancer, antidiabetic, antiulcer, and antiprotozoal properties.



Summary:

SSMRV College boasts a diverse botanical landscape with eight tree species and 20 flowering plant species on campus, many of which possess medicinal properties and air-purifying abilities.

Suggestion:

Consider leveraging the diverse plant species on campus by strategically implementing vertical gardens. These gardens could serve as a creative and space-efficient way to amplify the college's green initiatives, improving air quality while enhancing the aesthetic appeal of the surroundings. Vertical gardens offer an innovative means to optimize the existing botanical diversity and contribute to a more sustainable and inviting environment within the campus premises.

The image features a central graphic of a circular flow diagram with three icons: a water drop over waves, a sun, and a hand holding a leaf. The background is a warm, golden bokeh with a small plant in a glass on the left. The text 'ENERGY AUDIT' is prominently displayed in the center.

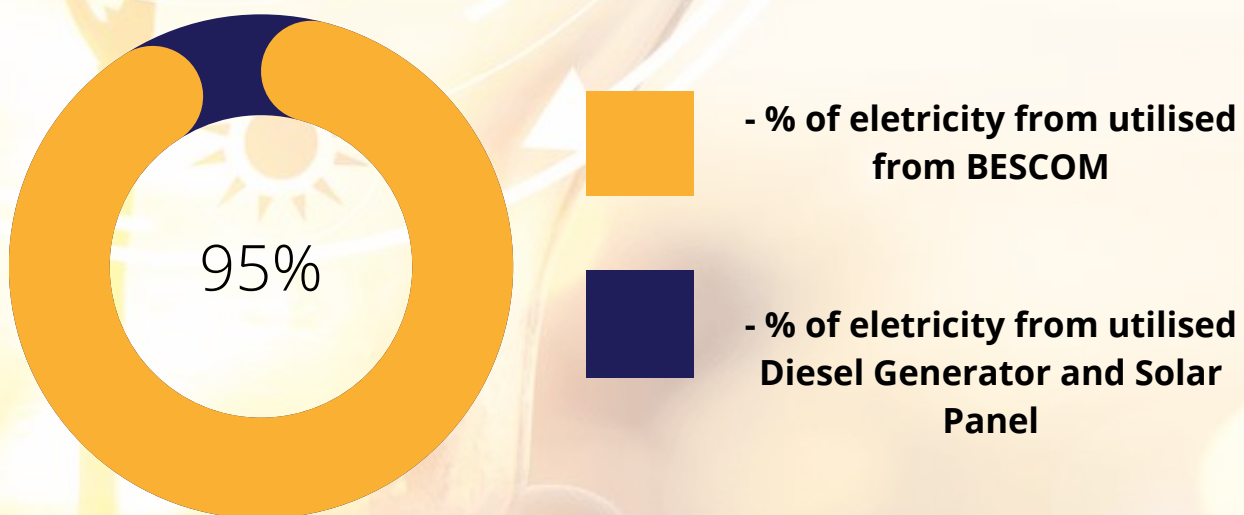
ENERGY AUDIT

Energy Audit

An energy audit conducted at SSMRV College from **April 1st, 2022, to June 30th, 2023**, aimed to assess equipment performance and identify energy-saving opportunities across the campus. The comprehensive audit focused on electrical energy consumption, taking stock of all electrical lighting and appliances. The goal is to provide a detailed report outlining potential solutions to optimize energy usage and guide the college in implementing efficient practices.

The audit meticulously documented various energy sources utilized within the college and their corresponding tariff structures. Currently, the primary energy source for lighting and other electrical loads is sourced from BESCO. Additionally, solar panels and diesel generators supplement a fraction of the energy needs, constituting approximately 95% from BESCO and 5% from solar panels and diesel generators.

This detailed analysis will empower the college to comprehend usage patterns, strategize for more efficient energy utilization, and explore avenues to integrate renewable energy sources more effectively into their energy portfolio.



Electricity Bill Analysis

The detailed analysis of the electricity bill indicates a concerning upsurge in energy consumption at the college. The institution has embarked on a series of proactive measures to reduce electricity usage. Key among these initiatives is the widespread adoption of Energy-Efficient LED Lights and the deployment of power-efficient equipment throughout the campus. Despite these efforts, however, the average monthly consumption has surged by 4000 Kilowatts compared to the previous year.

To further address this challenge, the college should explore additional strategies to optimize energy utilization:

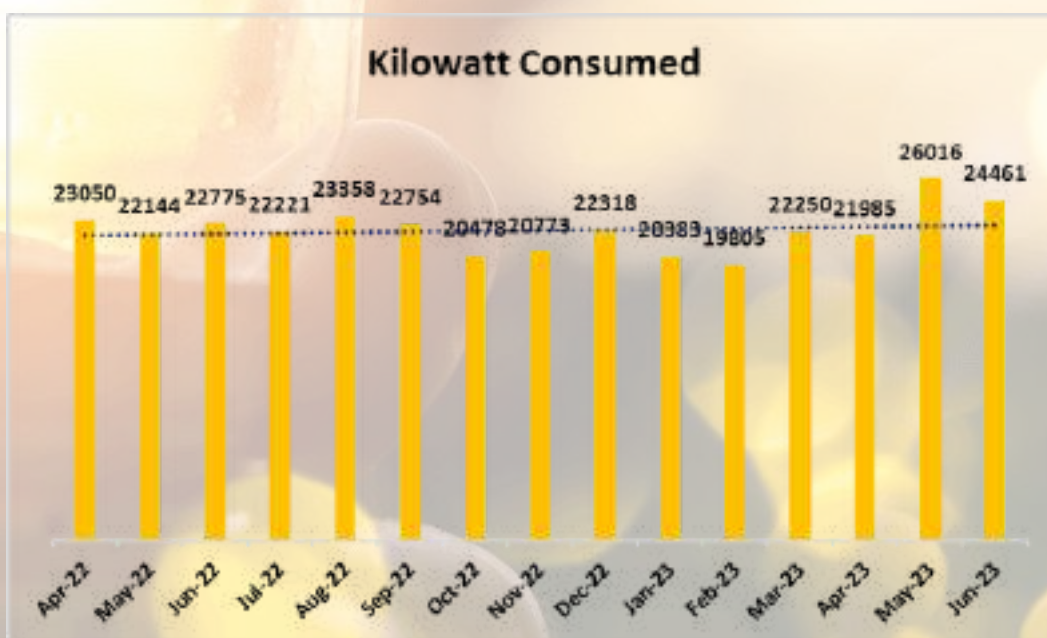
Shift to Power-Efficient Equipment: The institution is transitioning to energy-efficient appliances and machinery campus-wide. This shift aims to replace older, energy-intensive equipment with more modern and energy-saving alternatives.

Integration of Sensors and Automation: Implementing sensor-based technologies and automation systems to regulate and optimize energy usage in various facilities. This includes motion sensors for lighting control, automated HVAC systems for climate control, and smart energy management systems to monitor and regulate consumption.

Behavioral Awareness Campaigns: Launching awareness programs and campaigns to educate staff and students about energy conservation practices and encouraging responsible habits, such as turning off lights and equipment when not in use, can significantly reduce energy wastage.

Energy Audits and Monitoring: Regular energy audits and continuous monitoring of energy consumption patterns to identify areas of high usage and potential inefficiencies. This data-driven approach aids in refining strategies for better energy management.

By embracing these additional strategies and implementing energy-efficient technologies, the college can aim to mitigate the escalating energy demands and achieve a more sustainable and efficient energy footprint.



Solar Pannels

SSMRV College has taken strides towards sustainability by installing solar panels on its rooftops. Approximately 3% of the college's electrical energy is derived from these solar panels. The existing setup comprises 20 solar panels, each with an 8KWA capacity. However, this capacity proves insufficient to meet the college's energy needs, indicating the potential for optimization by installing a larger solar power plant.

Given the limitations of the current solar infrastructure, there's a strategic opportunity to enhance energy production and reliance on renewable sources by expanding the solar power infrastructure. Upgrading to a larger solar power plant would augment the generation capacity and significantly reduce the college's dependence on conventional energy sources. This proactive approach aligns with the college's commitment to sustainable energy practices and could pave the way for a more substantial transition towards renewable energy.



Solar pannels installed on rooftop

ENVIRONMENTAL AUDIT



Rain water harvesting

Water conservation initiatives at the college are commendable and demonstrate a proactive approach to address water scarcity. However, further enhancements and strategies can maximize the utilization of rainwater:

Maximizing Rainwater Usage: Instead of allowing excess rainwater to drain away, consider additional ways to utilize it. Implement systems or infrastructure to store or redirect surplus rainwater for other purposes, such as replenishing groundwater or supplying non-potable water for various campus needs.

Expansion of Storage Capacity: While the college currently boasts a substantial storage capacity of 1 lakh litres with two rain harvesting tanks, assessing the potential for additional storage or decentralized rainwater harvesting systems across the campus could further optimize rainwater collection.

Multi-purpose Applications: Besides using rainwater for gardening, explore other non-potable uses within the college premises, such as flushing toilets, cooling systems, or cleaning purposes. Upgrading infrastructure to enable these applications can significantly enhance water conservation efforts.

Educational Initiatives: Promote awareness among students and faculty regarding the importance of rainwater harvesting and its various applications. Engage the college community in water conservation practices and encourage participation in further initiatives.

Integration with Curriculum: Incorporate topics related to water conservation, sustainability, and rainwater harvesting into the academic curriculum. Offer courses or workshops that highlight the significance of these practices, fostering a culture of environmental responsibility among students.

Collaboration and Research: Partner with experts or research institutions to explore innovative rainwater harvesting techniques or technologies that could amplify water conservation efforts.

By implementing these improvements, the college can not only optimize its rainwater harvesting systems but also inspire a culture of sustainability and resourcefulness among its students and staff, contributing to a more water-conscious community.



Rainwater Harvesting Sumps



Sewage Treatment System

Sewage treatment is the systematic removal of pollutants from municipal wastewater. This involves a combination of physical, chemical, and biological processes designed to eliminate contaminants, resulting in treated wastewater—known as treated effluent—that meets safety standards for environmental release.

At SSMRV College, an efficient Sewage Treatment Plant (STP) has been established to manage the wastewater produced within the RVCE campus. The process involves several treatment steps, including Screening, Aeration, Sedimentation, Filtration, and Chlorination. As a sustainable practice, the treated effluent is repurposed throughout the college campus for gardening, demonstrating a responsible approach towards water reuse and environmental conservation.



STP System at SSMRV

