St. Joseph's College For Women (Autonomous)
Visakhapatnam - 530004

(NAAC Reaccredited & ISO 9001:2015, 14001:2015 Certified)

7.1.6(4) Environmental Audit

CERTIFICATE OF COMPLETION

This is to certify that

St. Joseph's College for Women (Autonomous)

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has successfully completed

ENVIRONMENTAL AUDIT

(WATER & WASTE MANAGEMENT)

The study was completed by Rekhapalli Environmental Solutions & Technologies Pvt Ltd

Dr Rekhapalli Srinivasa Rao

Green, Eco & Energy Lead Auditor
Certified ISO-14001 Auditor

Issued by

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April 2023

Environmental Audit
(Water & Waste Management)

St. Joseph's College for Women

(Autonomous)

Gnanapuram, Visakhapatnam, Andhra Pradesh,

India

Acknowledgements

REST Pvt Ltd

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Green, Eco & Energy Lead Auditor
Certified ISO-14001 Auditor

12 April 2023

Environmental Audit

(Water & Waste Management)

The REST Pvt Ltd acknowledges with thanks the cooperation extended to our team for completing the study at St. Joseph's College for Women (SJCW).

The interactions and deliberations with SJCW team were exemplary and the whole exercise was thoroughly a rewarding experience for us. We deeply appreciate the interest, enthusiasm, and commitment of SJCW team towards environmental sustainability.

We are sure that the recommendations presented in this report will be implemented and the SJCW team will be further improving their environmental performance.

Kind regards

Your sincerely

Dr Rekhapalli Srinivasa Rao
Green, Eco & Energy Lead Auditor
Certified ISO-14001 Auditor
REST Pvt Ltd

Executive Summary

The growth of countries across the world is leading to increased consumption of natural resources. There is an urgent need to establish environmental sustainability in every activity we do. In a modern economy, environmental sustainability will play a critical role in the very existence of an organization.

An educational institution is no different. Built environment, especially an educational institution, has a considerable footprint on the environment. Impact on the environment due to energy Consumption, water usage and waste generation in an educational institute is prominent. Therefore, there is an imminent need to reduce the overall environmental footprint of the institution.

As an Institution of higher learning, St. Joseph's College for Women (SJCW) firmly believes that there is an urgent need to address the environmental challenges and improve their environmental footprint.

True to its belief, SJCW has implemented rainwater harvesting and water conservative methods in the campus. Continuing with rainwater harvesting, the college can also investigate the following recommendations in short and long terms:

- Attain water positive status: SJCW should focus on capturing the harvested rainwater to substitute freshwater consumption, work on sustainable groundwater beyond the fence and create a framework towards attaining water positive status over a period. Presently, SJCW is consuming nearly 500 KL of fresh water per day. Since metering is not available, the water consumption is calculated rather than measure value. The first step is to increase the water conservation activities in the campus to reduce water consumption at source. The next step is to increase the rainwater harvesting capacity to completely offset the freshwater requirements of the plant. SJCW can also explore adopting lakes, desilting of ponds and restoration of water bodies in localities surrounding the campus in long term goal. Water getting harvested in those structures can offset the freshwater

consumption of the college. Based on the standard water requirements of the scholars, staff and hostel students the water conserved is 16% of the total estimated water requirement of the campus.

- Install water efficient fixtures: The best way to conserve water is at the source. Therefore, SJCW will have to install water efficient fixtures to reduce water consumption in long term goal. Some of the water efficient fixtures are:
  - Waterless urinals
  - Electronic taps (e-taps)
  - Electronic flush urinals (e-flush)
  - Foam taps
  - Spring loaded push taps
  - Low flush cistern

• Install sewage treatment plant / rootzone treatment: SJCW uses more than 500 KL of fresh water per day. Considering that 100 KL (least value) of water is being let to drain without treatment, good opportunity exists to reduce freshwater consumption by treating the sewage water and using the recycled water for gardening and flushing application. Existing biogas plant and phytoremediation in series to recycle water and reduce freshwater consumption.

• Install water flow meters: Water flow meters are vital in understating the water consumption patterns of the campus. Presently, the water consumption is calculated rather than being measured. Water flow meters gives an accurate status if water consumption in the campus and from the water consumption values, the roadmap for water conservation activities can be prepared.

• Segregate waste at source: SJCW has provided bins for waste collection. SJCW must embark on awareness creation methods to increase the effectiveness of collection and provide more bins for proper waste segregation.

• Maintenance of waste management yard: The existing waste management philosophy to be continued for vermi composting, e-waste disposal management. Waste is nothing but a resource in wrong place. Therefore, by maintaining the waste management yard, quality of wastes can be maintained.

Environmental Audit

SJCW and REST are working together to identify opportunities for improvement in water management, and waste management. This report highlights all the potential proposals for improvement through the audit and analysis of the data provided by SJCW for water consumption and waste management. The report details the process conducted for the analysis such as on ground surveys performed for listing the type of water consumers with consumption per year, types of waste generated and disposal mechanisms.

Submission of Documents

Environmental audit at SJCW was carried out with the help data submitted by SJCW team. SJCW team was responsible for collecting all the necessary data and submitting the relevant documents to REST Pvt Ltd for the study.

Preliminary Study

After the receipt of documents, a desktop review of the data for quality check, followed by preliminary study was carried out by REST Pvt Ltd. In case of discrepancy/inadequacy/non-clarity of data, REST Pvt Ltd team got in touch with the SJCW team for clarification/additional information.

Environmental Audit

Data submitted and collected during the visit was used to assess the water and waste management practices of the campus and finally provide necessary recommendation for environmental improvement.

Note: Environmental audit is based on the data provided by SJCW team. The scope of the study does not include the exclusive verification of various regulatory requirements related to environmental sustainability.

REST Pvt Ltd has the right to recall the study, if it finds (a) major violation in meeting the environmental regulatory requirements by the location and (b) occurrence of major accidents, leading to significant damage to ecology and environment.

Water Conservation

To achieve a water positive status by continuous reduction of freshwater consumption should be the ultimate focus of SJCW. Increased and focused attention should be given to attain water sustainability in future by inculcating the discipline of water conservation.

Fresh water consumption of SJCW	:	500 KL per day (KLD)
Rainwater harvesting	:	Carried out for roof area.

According to the report, 'Water in India: Situation & Prospects', India is the largest consumer of groundwater in the world with an estimated usage of 230 km^3 per year. Approximately 60 per cent of the demand from agriculture and irrigation, and about 80 per cent of the domestic water demand, is met through groundwater. As per the Department of Drinking Water and Sanitation nearly 90 per cent of the

rural water supply is from groundwater sources. This has led to an increased pressure on aquifers and the resulting hydrological imbalance.


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Note:BIOGAS UNIT
BIOGAS STOVE

Recommendations for water conservation

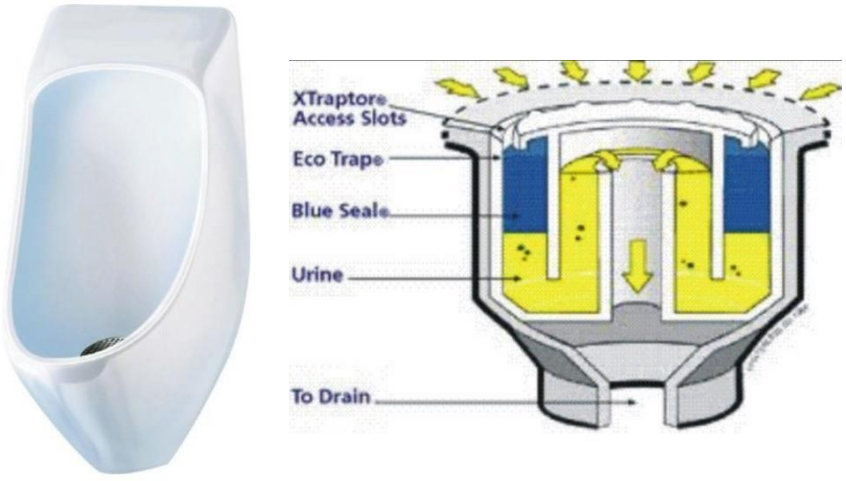
1) Waterless urinals: Waterless urinals look like regular urinals without a pipe for water intake. Men use them normally, but the urinals don't flush. Instead, they drain by gravity. Their outflow pipes conduits to a building's conventional plumbing system. In other words, unlike a composting toilet, which leaves you to deal with your waste, these urinals send the urine to a water treatment plant.

a. Urine flows into the drain insert of the Eco Trap.

b. Inside of the Eco Trap the urine moves through a floating layer of proprietary immiscible Blue Seal liquid, which creates a barrier, preventing sewer gases and urine odours from entering the restroom area.

c. The urine below the Blue Seal barrier overspills into the central tube and travels down into the drain line.

Waterless Urinal

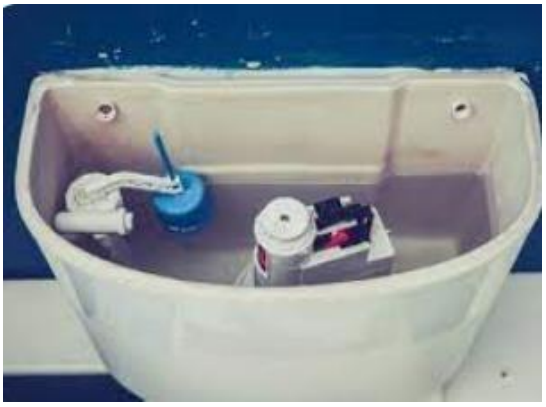


d. Approximately 1500 sanitary uses are possible with just 3 ounces of Blue Seal. When the Blue Seal liquid is gone, it is simply replenished. This only takes about 20 seconds to perform and the EcoTrap is not touched.

e. Urine sediments are retained within the EcoTrap. Replacement is easy and need only be done 2 to 4 times per year depending on traffic to the urinal. As tool called the X-Traptor must be used to remove the EcoTrap. The use of the special tool helps to minimize vandalism. The entire process of replacement only takes 3 to 4 minutes.

Waterless urinals are available for women. Indian manufacturers are supplying waterless urinals technology. Ekameco is one such company providing solution for women waterless urinals. You may visit www.ekameco.com and mail info@ekameco.com for more details on waterless urinals for women.

2) Volume reduction in flush tanks: One simple method is to add a one-litre equivalent water bottle in the flush tank thereby reducing its consumption majorly. One-litre savings in the tank will help to save approximately by 20% and doesn't require any investment.



3) Rainwater harvesting: Water harvesting or more precisely rainwater harvesting is the technique of collection and storage of rainwater at surface or in subsurface aquifer, before it is lost as surface run off. In artificial recharge, the ground water reservoirs are recharged at a rate higher than natural conditions of replenishment.

According to a report by the Central Groundwater Board published in 2007, the selection of a suitable technique for artificial recharge of ground water depends on various factors.

They include:

a) Quantum of non-committed surface runoff available

b) Rainfall pattern

c) Land use and vegetation

c) Topography and terrain profile

d) Soil type and soil depth

e) Thickness of weathered / granular zones

f) Hydrological and hydrogeological characteristics

g) Socio-economic conditions and infrastructural facilities available

h) Environmental and ecological impacts of artificial recharge scheme proposed

Rainwater Harvesting Techniques in Urban Area

In urban areas rainwater is available from roof tops of buildings, paved and unpaved areas. This water could be stored and used to replace freshwater as well as used for recharging the aquifer. Rooftop rainwater/storm runoff can be harvested in campus through:

- Recharge Pit
- Recharge Trench
- Tubewell
- Recharge Well

Recommendations at SJCW:

1. The existing rain water harvesting pits performance to be monitored.
2. Divert water to harvesting tanks or nearby water bodies in the premises

3. In addition to the usage of R.O plant water to the gardens, use the excess water as construction water and for raw water in the Treatment plant in the campus

Display water balance/conservation status at entrance of all blocks for overall involvement of all students & staff.

It is suggested to display specific water consumption numbers in terms of domestic use at the entrance of each block to create awareness among all students and stakeholders visiting the facility. This daily/continuous awareness creation will ultimately help in reduction of water consumption by students.

Water Saving Gadgets (long term goal)

It is suggested to display specific water consumption numbers in terms of domestic use at the entrance of each block to create awareness among all students and stakeholders visiting the facility. This

Electronic Taps (e-taps)

The latest trend in industries is to install electronic taps (e-taps). The advantages of using e-taps are as mentioned below:

• Unlike conventional taps, there is no twisting or turning in e-taps. They have a sensor, which cuts off water supply completely when not in use. This helps in saving up to 70% water during hand wash.

E-taps enable hands free operation. No fear of cross contamination or contact with germs. E taps score very high on hygiene. It is the most ideal choice for multipurpose and multi-user washrooms.

- E-taps can work efficiently up to raw water TDS of 1,800 ppm.

The touch free electronic taps, available in AC and DC models consume minimal power only. The AC model has an efficient battery back-up, while the DC model runs on just 4 alkaline batteries.

Operation of Electronic Taps

This has been successfully implemented in several hotels & restaurants. Of late, several industries have also started implementing this proposal. Thus, there is a good potential to optimize the Fresh water consumption by replacing the existing taps with e-taps.

Electronic flush (e-flush) urinals

The latest trend in industries is to install e-flush urinals. The advantages of using e-flush urinals are as mentioned below:

- E-flush urinals are fitted with a sensor, which senses the usage and flush with water for few seconds after use. This helps in saving 70% water during urinal flush.
- E-flush urinals enable hands-free operation and score very high on hygiene. It is the most ideal choice for multipurpose and multi-user washrooms.

- E-flush urinals can work efficiently up to raw water TDS of 1,800 ppm.
- The touch free e-flush urinals available in AC and DC models consume minimal power only. The AC model has an efficient battery back-up, while the DC model runs on just 4 alkaline batteries.

Electronic flush urinals

Hand wash

Foam taps

Conventional taps are used in the hand wash areas which results in wastage of large quantities of fresh water. Foam taps are a better fit in these high consumption areas. They consume 25-30% less water than conventional taps.

Foam taps

Spring loaded Push taps

Spring loaded push type tap is an alternate device for minimizing hand wash water. The spring- loaded push taps operate with the simple mechanism of pressing the knob for water. The knob is automatically released back to close position in 5-7 seconds. This saves about 30-40% of water compared to the conventional taps.

Spring loaded push taps

Low flush cistern

The latest model closets are water efficient and operate in dual mode, with a single flush releasing 2 litres of water and the dual flush releasing 4 litres per flush. This results in excellent water savings.

Low flush cisterns

Install sewage treatment plant - Rootzone treatment:

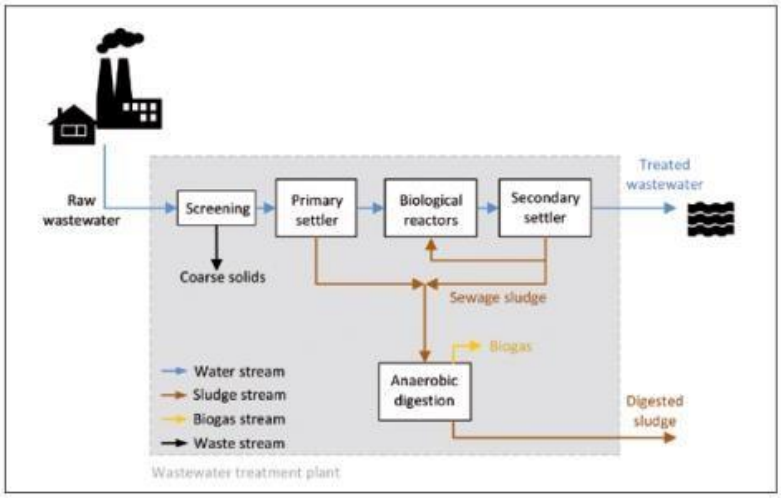
SJCW uses more than 500 KL of fresh water per day. Considering 100 KL of water is being let to drain without treatment, good opportunity exists to reduce freshwater consumption by treating the sewage water and using the recycled water for gardening and flushing application. Install biogas plant and phytoremediation in series to recycle water and reduce freshwater consumption.

Presently, sewage water is being let out to the drain without treatment. An opportunity exists to generate biogas from the untreated sewage water and use the generated biogas to substitute LPG used (40cylinders/year) in the college.

Biogas Production Potential of Wastewater

The sewage water is a useful waster as 1% of it in any quantity is a sludge which when subjected to anaerobic digestion will produce biogas. Wastewater is the effluent from household, commercial establishments and institutions, hospitals, industries and so on.

Sewage water source contains large amount of organic material which can be efficiently recovered in as sludge which and when subjected to anaerobic digestion, the sludge produces methane gas (biogas).Biogas is a mixture of gases containing 50-75% Methane, and 25-50% Carbon dioxide while 0-10% Nitrogen, 0-3% Hydrogen disulphide and 0-2% Hydrogen may be present as impurities which is produced by anaerobic digestion of organic material i.e. a sequential enzymatic breakdown of biodegradable organic material (Biomass) in the absence of oxygen. The process is usually carried out in a digester tank known as biodigester. Biogas is an important energy source used as cooking gas, to generate electricity, etc. thus producing biogas from wastewater is an efficient and sustainable waste management and renewable energy technique. One of the major environmental problems of the world today is waste management and wastewater constitutes a huge environmental problem to the society thus the need for wastewater treatment to recover and also recycle the recovered water for usage.

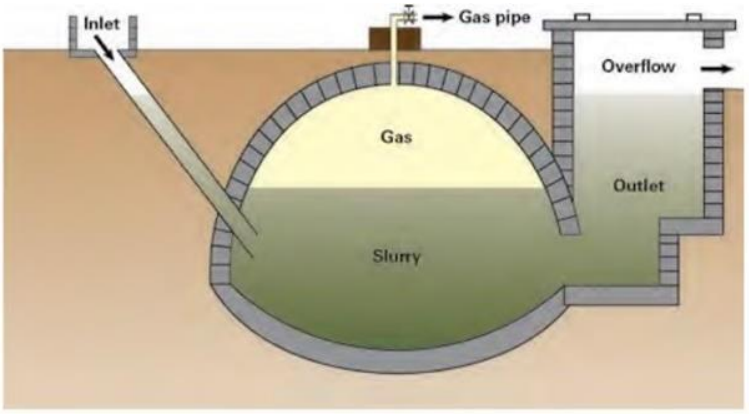


The physical process: this is the mechanical treatment of the water that involves removal of debris from the raw wastewater right from the point it enters the plant. The screening and primary settling of debris. Wastewater enters the treatment plant through the inlet chamber from where it is channelled to the coarse screen that removes solid waste.

The biological process: this involve the biotreatment of the sewage in the bioreactors. It is the heart of the treatment plant where a biological process takes place. The bioreactors of a treatment plant are usually large tanks consisting of several mammoth rotors and submersible mixers. While the rotor introduces atmospheric oxygen into the sewage, the submersible mixers keep the biomass in suspension thus several reactions take place in the bioreactors.

From the bioreactor, the sewage enters the sedimentation tank. Here the biological process ends and sludge is separated from water such that the clean water is passed to the disinfection tank for disinfection and onward discharge for use while the sludge is removed by the returned activation sludge (RAS) pump that removes and sends part to the anaerobic digestion chamber while some e return to the anaerobic bioreactor for reactivation.

Production of biogas is an anaerobic digestion whereby microorganisms break down biodegradable material in the absence of oxygen to produce methane/carbon dioxide used to generate electricity and heat. Sludge from the treatment plant (primary and activated sludge) is the main feedstock (biodegradable organic matter) in the biogas production plant of a wastewater treatment plant and the biogas production process involves series of steps.



The combine sludge resulting from primary and secondary water treatment is gathered, sieved and thickened to a dry solids content of up to 7% before entering

the digesters. Optionally, the sludge can be pre-treated by disintegration technologies with the aim to improve the gas yield. In the anaerobic digestion process, the sludge is pumped into the anaerobic continuously stirred tank reactors where digestion takes place. In the process, microorganisms break down part of the organic matter that is contained in the sludge and produce biogas, which is composed of methane, carbon dioxide and trace gases. The raw biogas produced is dried and hydrogen sulphide and other trace substances removed and burned in burners after treatment. The digested sludge is dewatered, and the water reintroduce into the treatment plant while the remaining undigested matter used for organic fertilizer.

Existing bio-gas plant:

A bio-gas plant of capacity 4m3, managed by conglomerate, operated by campus, is present, where the kitchen and food waste is fed so as to convert it into biogas. The biogas is in turn used in the hostel mess kitchen (managed by conglomerate) for cooking purposes. The plant on an average produces 3kgs of Biogas per day, which is used in the hostel mess kitchen. Both biogas and hostel mess are operated by the conglomerate.

Biogas Plant at Campus

Rootzone treatment:

Root Zone' is a scientific term used to cover all the biological activity among different types of microbes, the roots of plants, water soil and the sun. It consists planted filter-beds containing ravel, sand and soil. The RZWT system utilises nature's way of biologically processing domestic & industrial effluents. This effective technology called Decentralised Wastewater Systems (DEWATS) was developed in 1970s in Germany and has been successfully implemented in different countries mainly in Europe and America.

The root zone wastewater treatment system makes use of biological and physical-treatment processes to remove pollutants from wastewater. Due to its natural process, there is no need to add any input such as chemicals, mechanical pumps or external energy. This reduces both the maintenance and energy costs.

• To accomplish this, the root zone wastewater treatment undertakes the following steps:

• Pre-treatment done in a Settler - a device that separates the liquid from the solid First treatment takes place in an Anaerobic Baffled Reactor - a device with several identical chambers through which the effluent moves from top to bottom.• Second treatment happens in an Anaerobic Filter - a device filled with a filter material (cinder), through which the effluent moves from top to bottom.

Third treatment takes place in a Planted Gravel Filter - a structure filled with gravel material and planted with water-resistant reed plants, which provide oxygen to the passing effluent.

The Root Zone Wastewater Treatment system takes into account the natural slope of the ground, so that water flows from one device to another without any ternal energy input such as motor pump. Once the reed plants create an established stand, usually after the first growing season, the reed bed requires little or no maintenance. The plant foliage will soon blend naturally into the landscape, ever changing with the seasons and creating a pleasing sight as well!

Install water flow meter:

Water flow meters are vital in understating the water consumption patterns of the campus. Presently, the water consumption is calculated rather than being measured. Water flow meters gives an accurate status if water consumption in the campus and from the water consumption values, the roadmap for water conservation activities can be prepared.

Water Meters would have many advantages:

- Encourage water conservation - important given strain on water resources
- Encourage allocatively efficient distribution. People would consume to where the marginal

cost = marginal utility

- In long term lower overall water consumption would reduce leading to even lower water bills.
- Recommended to calibrate existing water meter minimum once in two years.

Water Sources

There are three wells – two with borewells and one without bore well. The one with borewells are used to extract ground water. Apart from this the college has metered municipal water connection. This is the second source of water.

Waste Management

India has drawn world's attention with its high paced urbanization and industrialization. Over the last decade, India has emerged as the fastest growing country with rapid economic growth. A renewed focus on sustainable growth and development is imperative as India strives to maintain its high GDP growth rate in its pursuit of achieving developed country status by the year 2022. However, the flip side of higher economic growth has resulted in increased consumption of the natural resources, increased waste generation and hence ecological degradation.

Present status: SJCW has initiated waste management activities inside its facility.

Separate bins have been provided for different types of wastes.

Waste bins are provided throughout the campus and students are being urged to

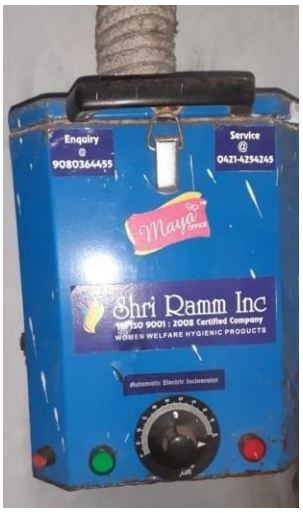
use the bins effectively.

Garden Waste

The main garden area in the centre of the admin block has compost pit where leaf litter is dumped and converted into compost. The resulting compost is again used for gardening purposes.

Sanitary Waste

Being a women's college, sanitary waste is a huge component of the campus. There are washrooms across the campus and hostel. All these washrooms have sanitary napkins incinerators installed, which are used by the students to dispose the sanitary pads. Thus, all the sanitary waste is getting incinerated on site, instead of disposing through the municipal body, thus saving a lot of resources indirectly.



Sanitary Napkins Incineration Machines installed in Washrooms

For better hygiene of the students, Sanitary Napkins dispensing machines are also placed in some places.

Sanitary Napkin Vending Machine at Washrooms

Sewage Waste

The sewage waste is collected in septic tanks and disposed through the local municipality licensed septage waste disposal vendor.

Recommendation: The waste management yard must be maintained in a similar fashion as that of a raw material storage room. Therefore, a total revamp of the waste storage yard is to be carried out. By doing so, the quality of the materials stored in the yard will not deteriorate and can be used a raw material for a subsequent process.

Enhance awareness creation, training and capacity building.

SJCW should focus on implementing sustainable waste management practices. SJCW should regularly interact with Pollution Control Board and TSDF operators to enhance knowledge on waste management. The team should also take efforts to communicate the waste management and other policies and activities to all students in the college.

Achieve zero liquid discharge status:

SJCW may install a STP to treat and recycle water. The treated water from STP can be used to substitute freshwater by utilizing the treated water in both high end and low-end applications.

Chemistry labs effluent has variation in its pH on a large scale. The lab effluent from an educational institute generally comprises of acids like HCl, HNO3, H2SO4, EDTA and bases like NaOH, CaOH, Na2CO3, NH3 whose pH ranges from 2 to 13. This effluent causes adverse effects when disposed directly onto land or water bodies.

As per effluent standards, Schedule VI of Environment (Protection) Act, 1986 all the parameters should be in the prescribed standards. Neutralization is a chemical reaction in which acid and base react to form salt and water bringing the pH near to 7. This principle is used to control the variation of pH of the lab effluent.

Recommendation at SJCW:

Employing a neutralization tank is found to be the more suitable method to achieve neutralization. Recycle this neutralized water, after Ph correction into waste water tank. Avoid drainage the laboratory waste water into storm water channel. As of the basic info from the audit team, Neutralization tank constructed for one lab. Good initiative to improve eco-score. Recommended to implement for all the Labs.

Zero Liquid Discharge

Educational Institutes should follow Zero liquid discharge to meet with the environmental regulation in a challenging way. The institute has to identify potentially recyclable streams and applicability of four R's (Reduce, Reuse, Recycle and Recover). By achieving ZLD status and due to recycling of wastewater, the fresh water consumption of the campus can be reduced.

Recommendations:

The treated water can be used in the campus for gardening purpose, watering plants and lawns, in toilets flushes, in HVAC Cooling, Sludge generated from the

Sewage Treatment Plant shall be rich in organic content and an excellent fertilizer for horticultural purposes.

- Establish a college Environmental committee that will hold responsibility for the enactment, enforcement and review of environmental policy.
- Save Water" posters to be affixed in the class rooms, hand washing areas.
- Carpooling, wherever possible, particularly by those who are using cars should be encouraged.
- Encourage the use of bicycles and public transport system by the community, particularly the student community.
- Year wise internal audit on green, water and energy to be conducted by respected teachers.
- Department wise awareness programmes to be organised by staff representative to each committee.
- Signage/posters should be posted in high water consumption areas in academic blocks to increase awareness regarding water conservation.
- More number of waste bins (dry and wet) to be provided preferably for recyclable waste and for food waste. Recyclable waste can fetch revenue and food waste segregation can be utilized in bio-gas plant for producing methane which can be used for mess as fuel reducing the consumption of gas cylinders.
- E-waste to be properly sent to recycle authorised by SPCB. The E-waste contains precious metal which can be taken out by recyclers and reused by manufacturers.
- Replace all old faucets with water saving faucets.

Hazardous and e-waste management

Hazardous Waste Management Rules are notified to ensure safe handling, generation, processing, treatment, package, storage, transportation, use reprocessing, collection, conversion, and offering for sale, destruction and disposal of Hazardous Waste. These Rules came into effect in the year 1989 and have been amended later in the years 2000, 2003, 2008 and with final notification of the Hazardous and Other Waste (Management and Transboundary Movement) Rules, 2016.

Recommendations:

1. Segregate different types of wastes as dry and wet waste
2. Hazardous waste collection into separate waste yellow-colored bags
3. E-waste collection bins
4. Initiate disposal methods with approved contractors, make few MoU with local e-waste collection consultants.

Wealth from waste:

Wealth from waste is a best technique to be implemented in the educational institutes to promote and make the pupil aware of the sustainable practices. This brings a clear idea of what we are wasting instead of making it in to a good resource. Anything of value is called a resource, whereas the waste which in turn be converted in to a valuable resource is being kicked off in to the bins.

Recommendations at SJCW:

The wastes such as Demolition waste, garbage from the kitchens, remaining food from the canteens, paper from the offices, Water from Kitchens, water from STP and Neutralization Tank can be converted into useful products. Encourage students to make innovative projects.

Eco-friendly pavements.

Rubber tire benches at play grounds and at open classroom

Sitting benches with used plastic bottles.

Conclusion

Environmental sustainability is a continuous process and there is always a scope for improvement. SJCW has displayed itself as an advocate of environmental sustainability by getting environmental audit carried out. The organization has implemented several initiatives and measures to enhance efficiency and to optimize resource intensity. The journey ahead in the path towards environmental excellence has immense scope for improvement as brought out by this report.

SJCW needs to focus and work on areas efficiency levels needs to be enhanced. For example: waste management. The observations and suggestions put forth by the report would help the facility in improving its environmental performance and pave way for ecologically sustainable growth.

This report may be taken as a guide and roadmap for achieving higher performance rating in environmental stewardship. As one of the pioneers and leaders SJCW shoulder the task of further 'learning-teaching-learning' to improve, excel, and continue the innovative efforts for success of their students and associates.

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