Sushant University

Key Indicator – 7.1 Institutional Values and Social Responsibilities

(50)

7.1.4 Water conservation facilities available in the Institution:

1. Rainwater harvesting
2. Borewell /Open well recharge
3. Construction of tanks and bunds
4. Wastewater recycling
5. Maintenance of water bodies and distribution system in the campus

(5)

Criterion 7 – Institutional Values and Best Practices

(100)

Appendix-III

Green Audit Reports on Water Conservation by Recognised Bodies

WATER AUDIT

SUSHANT UNIVERSITY

SECTOR - 55, GURUGRAM – 122003 (HARYANA)

Conducted By:

A-Z ENERGY ENGINEERS PVT. LTD.

PLOT NO. 12, 4860-62, HARBANS SINGH STREET, KOTHI NO. 24,
WARD NO. II, DARYA GANJ, NEW DELHI-11002

011-23240541, 9811402040 pp_mittal@yahoo.com

INDEX

1. Water Use Study

During audit, it has been seen that a lot of work for conservation of water has already been taken. It has been observed that annual water used in university is well within limits as per National Building code in vogue. After going through detailed use pattern it has been found that NBC-2016 standard use pattern are not only met but there is significant reduction of water use to the extent of 12.67 #as per available data. This can be further reduced with complying to recommendations of water audit findings.

The following points needs attention and required to be addressed. The saving targets should be fixed for next 12 months and practice of recording and reviewing of water use on day to day basis for pointing out any sudden variation.

- All plumbing fixtures should be regulated from valves for reduction of flow. This practice has already started and all taps be replaced when becomes due for replacement after end of life with water efficient fixtures as per plan and the plumbing fixtures in frequently used area should be replaced on priority.
- All cisterns be replaced with dual mechanism low flow cisterns so that water can be used efficiently as per requirement as and when these become due for replacement.
- There are Awareness program conducted and these should be organized for staff as well as students through seminars and workshops with increased frequency for reduction of water foot print.
- Rain Water harvesting system that has been provided should be maintained as per requirement.
- There is no run off of water from premises even during peak rains which is very good effort and thus water table is not depleted.
- **Water Meters should be got provided for individual uses for monitoring of different water use in order of priority.**

a. Canteen

b. Individual Hostels

c. Mess

d. Individual Blocks

e. Chemistry Lab and other Lab.

f. Water from STP for Horticulture use.

- **Water Meters should be got provided for individual bore wells for monitoring of different water extraction source to capture track on ground water extracted.**
- Water conservation target over the present consumption should be fixed by top management and action for meeting these reductions be initiated.
- There should be stickers and bills for water conservation pasted in university premises.
- Students should also be involved along with all stake holders for water conservation.

2. Auditing for Water Management

Water is a natural resource; all living matters depend on water. While freely available in many natural environments, in human settlements potable (drinkable) water is less readily available. We need to use water wisely to ensure that drinkable water is available for all, now and in the future.

A small drip from a leaky tap can waste more than 180 liters of water to a day; that is a lot of water to waste - enough to flush the toilet eight times! Aquifer depletion and water contamination are taking place at unprecedented rates. It is therefore essential that any environmentally responsible institution should examine its water use practices. Water auditing is conducted for the evaluation of facilities of raw water intake and determining the facilities for water treatment and reuse. The concerned auditor investigates the relevant method that can be adopted and implemented to balance the demand and supply of water. It is therefore essential that any environmentally responsible institution examine its water use practices.

Water Audit

There is ample awareness of management of university campus towards sustainability. Management of university is very instrumental in spearheading movement of sustainable practices in running of university and also facilitating dissemination of these practices to all students studying in this campus. It is through support of management and active involvement of other stake holders and staff members that this university has many accolades to be a matter of pride for all concerned.

In all matters of resource use, there is effective implementation of 3R's. Reduction of resource use, Recycling of resources and also re-use. It is for attaining objectives of sustainability.

Introduction to water management

Why conserve water:

Water is the most precious of all resources, to sustain it, is to preserve life. However, the careless attitude towards the misuse of fresh water linked with its growing scarcity caused by population growth and climate change, suggests that rational use of water and the adoption of conservation measures are urgently needed.

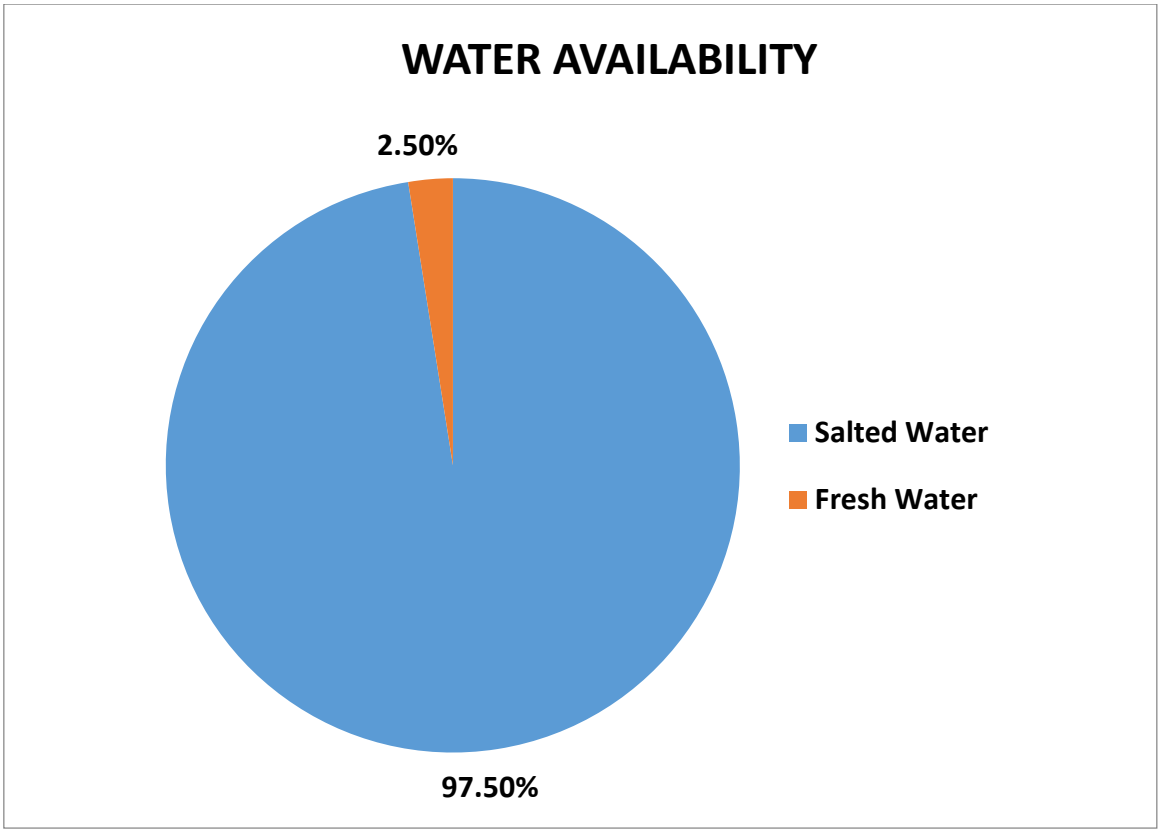
To sustain this valuable resource, it is imperative to first understand how and where water is used in university buildings and compare this consumption with benchmarks. This would enable the sector to realize the water saving potential that exists and help in devising effective strategies to achieve it.

For years freshwater supplies have been assumed to be an inexhaustible resource, strongly depending on its regenerative capacity offered by the naturally occurring water cycle. Our planet contains a finite quantity of water, where 97.5% of the supply can be found within the oceans in the form of saltwater and only 2.5% is fresh.

Most of this freshwater is difficult to access, in the form of ice within the Polar Regions and mountains or groundwater. Only 0.01% of all water on Earth is useable by ecosystems and humans

There are also a number of human-induced factors which are affecting the quality and quantity of global freshwater resources.

- Increase in demand due to population growth leading to over exploitation of water sources.
- Degeneration of water quality due to human activities such as deforestation, urban growth, industrial and agricultural practices.
- Change in rainfall patterns due to global warming and climate change.



Why consider water conservation in university buildings ?

- Environmental conservation: Reducing dependence on mains water supply can reduce the strain on an increasingly scarce resource.
- Future legislation: The government is currently reviewing its policy for setting targets for water consumption. It is only a matter of time before mandatory regulations are introduced.
- Social responsibility: University's have a role to play and can lead by example.
- Reduced water bills: Efficient use of water within university buildings will lead to reduced water bills as well as low energy bills.

Hence, all new and existing university buildings/university campus should attempt to close the loop within the water cycle.

- Precipitation falling on sites should in theory re-charge aquifers and natural waterways.

- Water entering a university building should be used efficiently, in order not to diminish its source, and returned to the natural environment in a state that enhances aquatic habitat.
- If contamination occurs, the building should provide the necessary treatment to remove pollutants. To achieve the above objectives, it is essential to understand where and how much water is used within the university buildings.

The maximum conservation opportunities lie in these areas. Special attention should be given in Hostel and there should be regular water leak audits conducted and report should be documented.

As presently data for extraction of water is not available, it is recommended that all input source of water should be metered and the consumption pattern should be reviewed daily/weekly and monthly and any significant deviation in consumption should be immediately addressed. It has been estimated from estimated flow and running hours of pumps as per details provided.

3. Turf Area

S.No.	Description	L	B	Area -Sq. Mts
1	Grass Ground Area	64	34	2176
2		114.5	60	6870
3		32	39.7	1270.4
	Total Area in sq. mtrs			**10316.4**

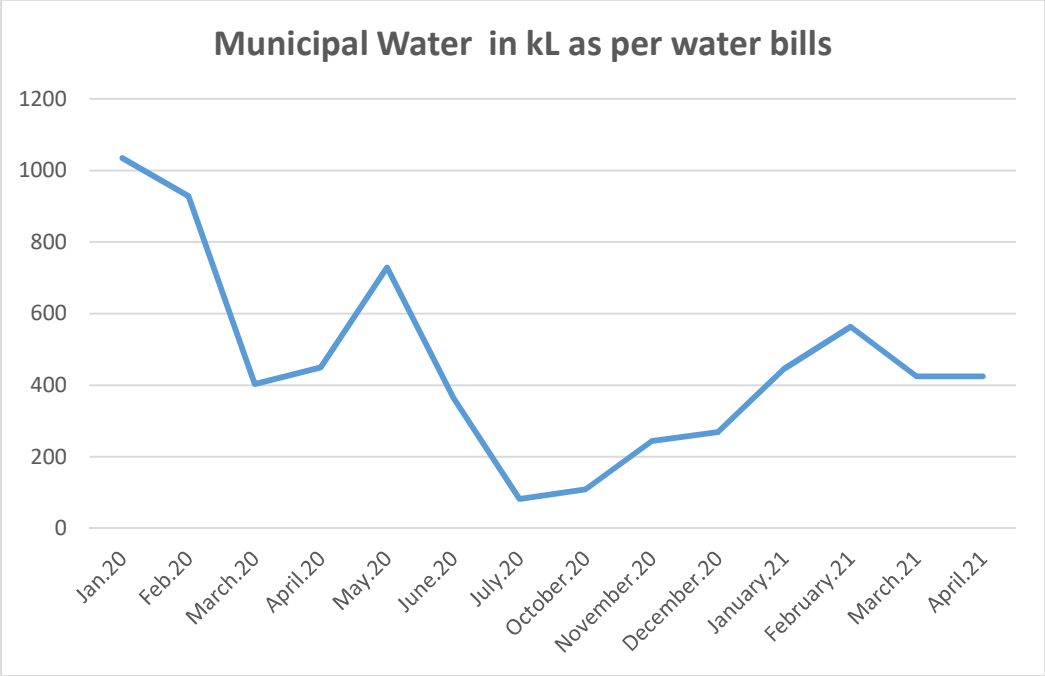
Turf Area-Sushant University

S. No.	Description	L-M	B-M	Area - Sq. Mts	Water require-ment per day per sq. mts.	No. of Days	Annual Water require-ment	Capacity of STP-kLPD	Annual Water availability for gardening at Full capacity
1	Grass Ground Area	64	34	2176					
2		114.5	60	6870					
3		32	39.7	1270.4					
	Total Area in sqmtrs			**10316.4**	**5**	**365**	**18827.43**	**250**	**91250**

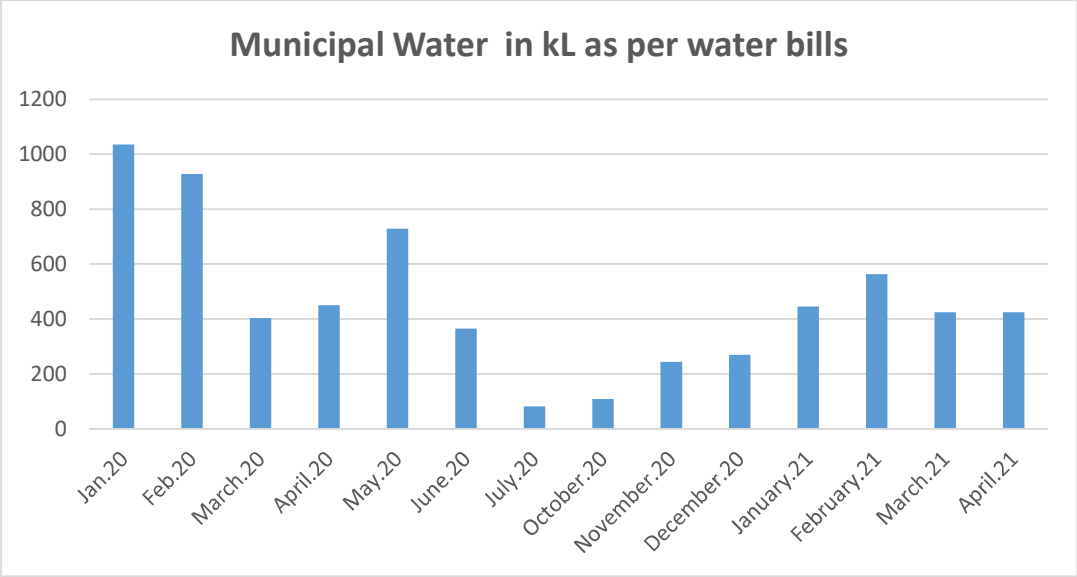
4. Water Use in Campus

Water Consumption Sushant University Gurugram

Month	Municipal Water inkL as per water bills
Jan.20	1035
Feb.20	928
March.20	403
April.20	450
May.20	729
June.20	365
July.20	82
October.20	109
November.20	244
December.20	269
January.21	446
February.21	563
March.21	425
April.21	425



The consumption trend has fallen due to Covid restrictions.



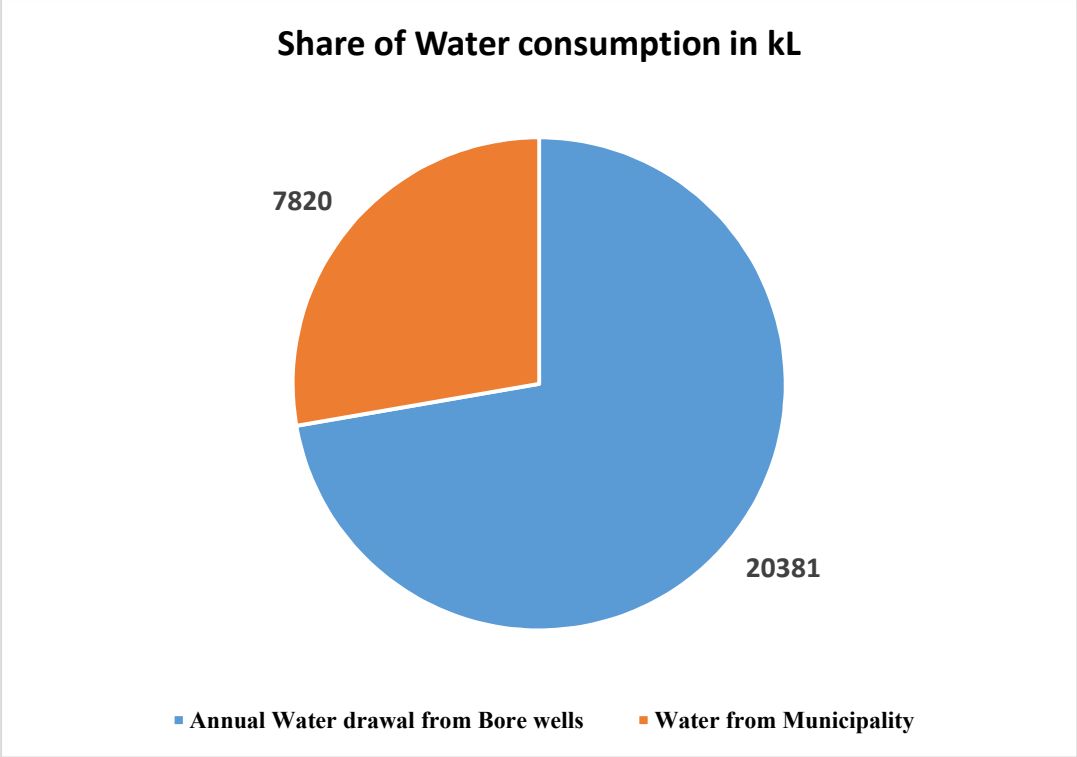
Annual use analysis of municipality water

Month	Municipal Water inkL as per water bills
Jan.20	1035
Feb.20	928
March.20	403
April.20	450
May.20	729
June.20	365
Average of Six Months	651.67
Annual Estimated water consumption based on data provided	7820
July.20	82
October.20	109
November.20	244
December.20	269
January.21	446
February.21	563
March.21	425
April.21	425

Pump Flow Data estimated

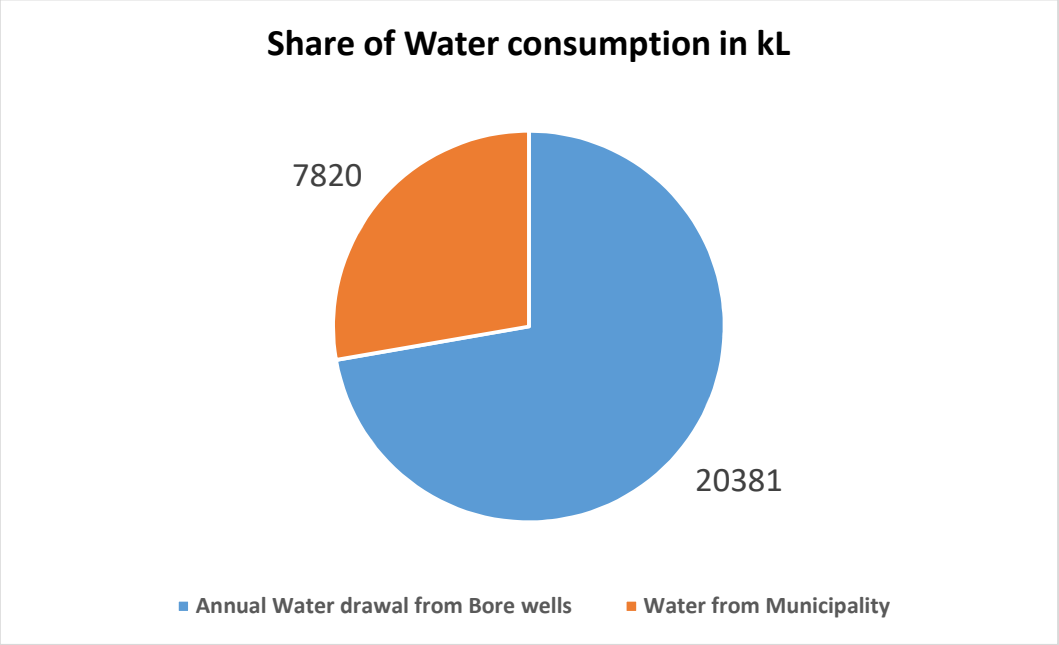
Month	Estimated flow - KL/Hour	No. of Pumps	No. of days	No. of Hours	Water drawal -kL
April.19	4.45	2	20	10	1780
May.19	4.45	2	15	10	1335
June.19	4.45	2	10	10	890
July.19	4.45	2	21	10	1869
August.19	4.45	2	21	10	1869
September.19	4.45	2	20	10	1780
October.19	4.45	2	21	10	1869
November.19	4.45	2	20	10	1780
December.19	4.45	2	21	10	1869
January.20	4.45	2	21	10	1869
February.20	4.45	2	18	10	1602
March.20	4.45	2	21	10	1869
Annual Water consumption					**20381**

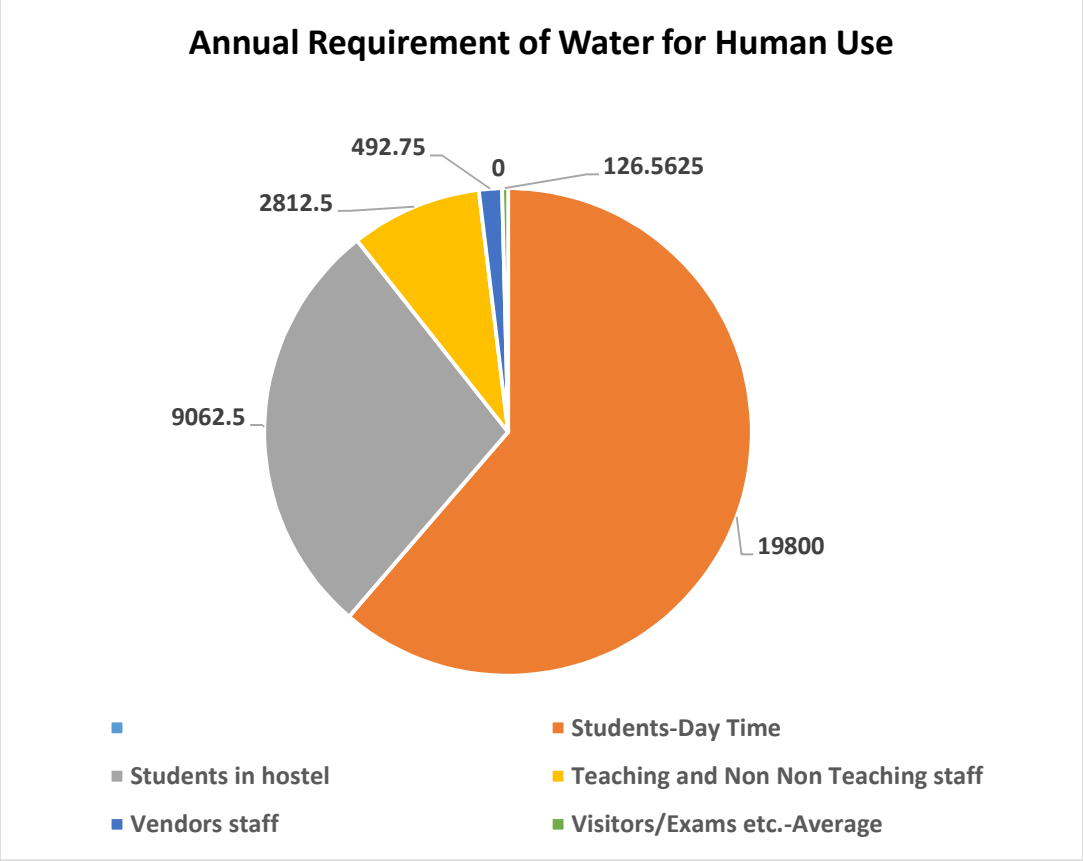
Break up of Water consumption	kL
Annual Water drawal from Bore wells	20381
Water from Municipality	7820



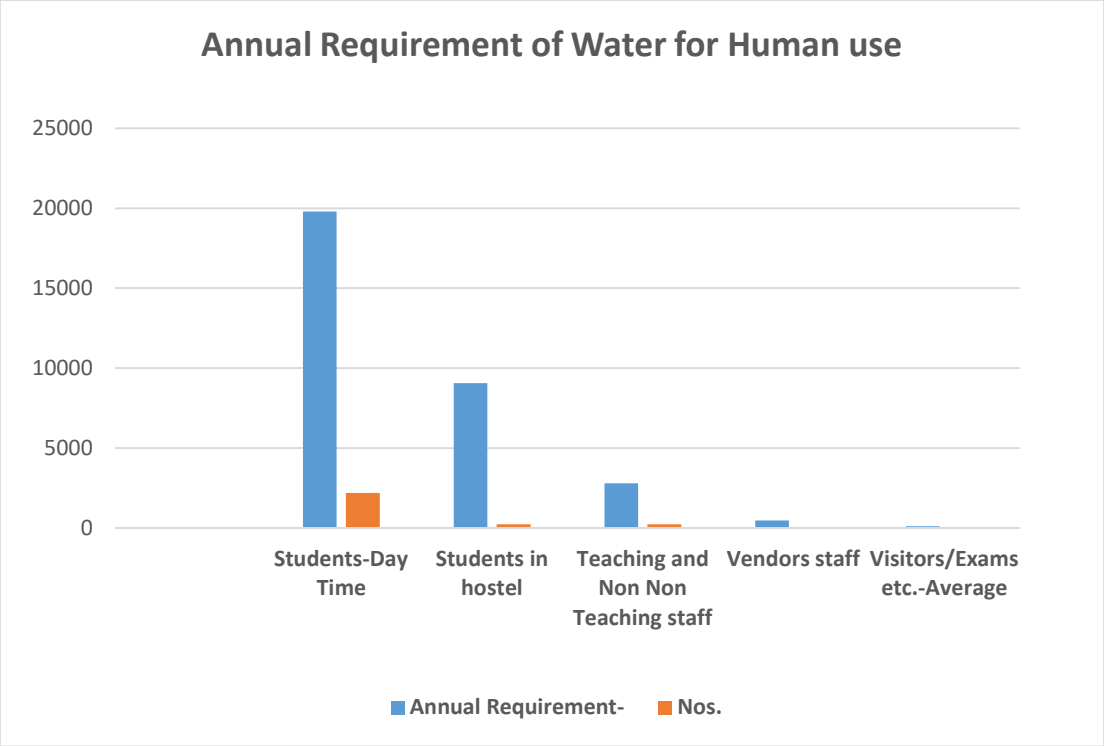
Theoretical Water Consumption as per NBC-2016

Sr. No.	Description	No. of Hours stay	Nos.	No. of days	Requirement of water /Day	Annual Requirement-
1	Students-Day Time	8	2200	200	45	19800
2	Students in hostel	24	250	250	145	9062.5
3	Teaching and Non-Teaching staff	8	250	250	45	2812.5
4	Vendors staff	8	30	365	45	492.75
5	Visitors/Exams etc.-Average	2	50	225	45	126.5625
	Total Annual Water Requirement-Theoretical					**32294**


Share of Water consumption in kL
7820
20381
Annual Water drawal from Bore wells
Water from Municipality

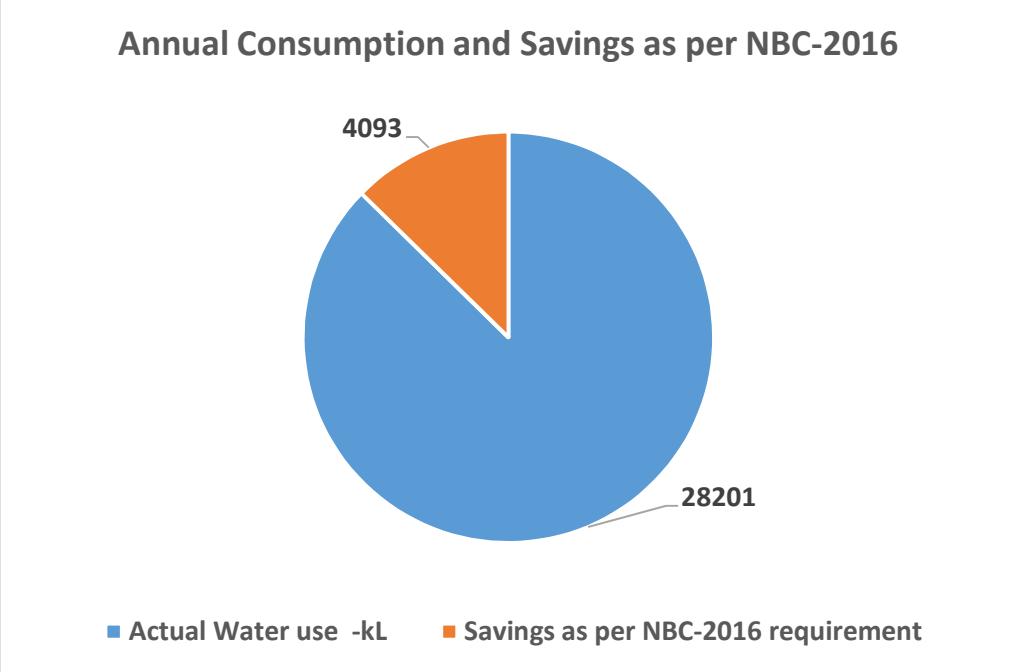

Annual Requirement of Water for Human Use
492.75
0
126.5625
2812.5
9062.5
19800
Students-Day Time
Students in hostel
Teaching and Non Non Teaching staff
Vendors staff
Visitors/Exams etc.-Average

It has been informed during audit that all water required for horticulture use is managed from treated water of STP.

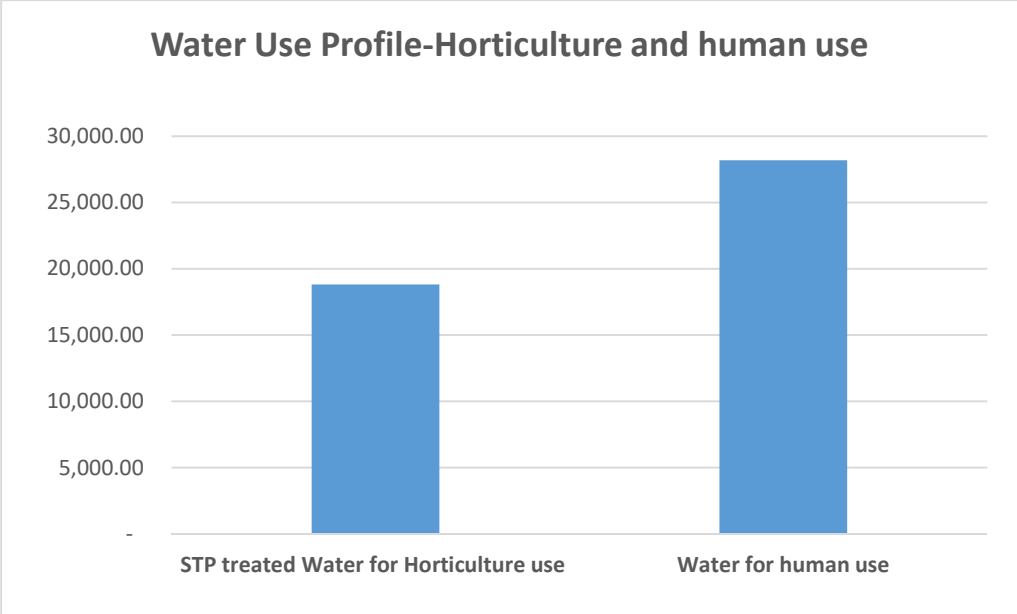


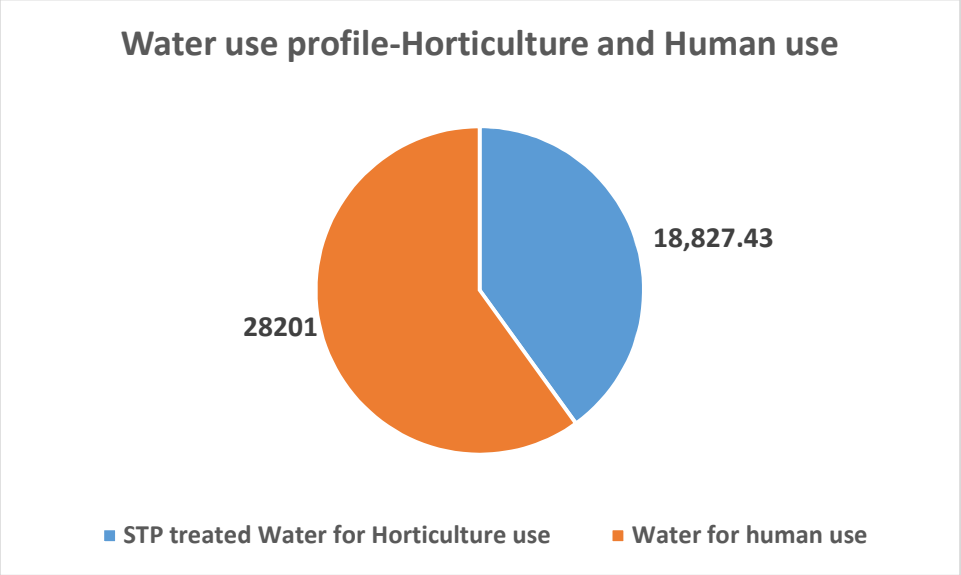
Water Balance

Sr. No.	Description	Total Water drawn from Bore well-kL	From Municipality-kL	Total Water Consumption
1	Actual Water use	20381	7820	28201
2	Theoretical Water Requirement			32294
3	**Savings**			**4093**



S.No.	Water use	Quantity-kL
1	STP treated Water for Horticulture use	18,827.43
2	Water for human use	28201




Water use profile-Horticulture and Human use
18,827.43
28201
STP treated Water for Horticulture use
Water for human use

5. Detailed Observations

Sr. No.	Observation/Parameters	Yes/No	Recommendations
1	Is there any bench mark for water use	No	But Consumption of water for human consumption is lower than NBC Bench Mark and the water use is managed effectively.
2	Is the water conservation opportunities identified	Yes	Low flow fixtures and Cisterns with double plug mechanism should be provided. Flow of pipes can be reduced by use of water flow reduction accessories.
3	Are there any signs, posters or stickers in university premises to encourage water efficiency and remind students to report leaks?	No	Suitable water conservation stickers and bills should be displayed conspicuously for creating awareness
4	Is there any water management team to review water use?	No	Establish a water management team and meet regularly to review use and identify water saving opportunities. Consider involving students, teachers, administrative staff and even parents, visitors and volunteers.
5	Have you installed sub-meters in high water using areas?	No	Sub-meters in high water using areas should be got installed and monitor regularly to know accurately where water is used and identify any problems
S.No.	**Observation/Parameters**	**Yes/No**	**Recommendations**
	Amenities		
1	Are the taps in hand basins are water efficient ?	No	Install flow regulators to reduce flow to at least 4.5L/min: If taps are used only for hand washing, consider a flow rate as low as 1.7L/min for super efficiency. Consumption is priestly reduced by closing of valves.

2	Do cleaners hose down amenity areas?	No	If you must use a hose ensure it has a water efficient trigger nozzle.
3	Does University have single flush toilets?	Yes	Consider replacing single flush toilets with 6/3L or 4.5/3 L dual flush models, when these become due for normal replacement.
S.No.	**Observation/Parameters**	**Yes/No**	**Recommendations**
	Canteen, Mess, Hand Wash Area		
1	Are taps in kitchens water efficient?	No	If No, install 7.5L/min flow restrictors on kitchen/art room sinks **. Tip: Pre-rinse spray nozzles in kitchens can use less than 6L/minute and make it easier to rinse and clean dishes.**
2	Do staff leave taps running while they are cooking and cleaning?	No	Still , install stickers to remind staff to turn off taps. Consider installing sensor taps.
	DNA : Data not available		
	Outdoor areas		
1	Has appropriate staff completed the Water Conservation training	No	Ensure appropriate staff complete the Water conservation training.
2	Do campus sub-meter irrigation water supply?	No	Consider installing sub-meters to determine water use and identify any leaks, and monitor regularly.
3	Do you use an alternate water source to irrigate your landscape?	yes	Water rejected from RO is stored and used for irrigation purpose.
4	Do you have Water wise /Water efficient Plants in your garden?	Yes	A lot of native species have been planted there by reducing water requirement.

S.No.	Observation/Parameters	Yes/No	Recommendations
	Training and Awareness		
1	Whether staff in general are aware about importance and need of water conservation	No	The awareness should be created amongst all maintenance and operation staff.
2	Whether there is a program for sensitizing students through workshop/seminars to educate them regarding scarcity of water and its conservation	Yes	There are awareness program to create awareness amongst students through training
3	Whether there is a program in place to involve students in water conservation targets.	Yes	There should be regular active involvement of students, they being helpful in university as well as it shall be useful for them during their life time in future.

6. Flow Rate of Fixtures Measured

Water flow Measurement

	Time taken for filling One litre of measure				
Sno	**Location**	**WC**	**Wash Basin**	**Taps**	**Total Set**
1	Girls Hostel Room No - 213	1.43	11.86	2.35	88 Toilets
2	Officers Toilet D - 106	1.4	3.14		WC-1 / WB-1 / U - 1 = 5 Toilets
3	Faculty Block B & C	9.97			
4	Block B & C - Girls	1.4	11.47		WC-4 / WB-4 = 2 Toilets
5	Block B & C - Boys	1.8	5.07		WC-3 / WB-4 / U - 7 = 2 Toilets
6	Block A - Male	5.07	16.15		WC-3 / WB-4 / U - 8 = 3 Toilets
7	Block A Female				Locked
8	Block E - Male		5.43	4.89	WC-3 / WB-3 / U - 4 = 3 Toilets
9	Block E Female		7.75		WC-3 / WB-3 = 3 Toilets
10	Block E Handicaped		5.03		WC-1 / WB-1 = 3 Toilets
11	Block D Chemistry Lab			3.07	
12	Block D Chemistry Lab			3.76	
13	Block D Chemistry Lab			4.43	
14	Block D - Male	3.38	13.59		WC-4 / WB-4 / U - 5 = 6 Toilets
15	Block D Female	3.06	6.02		WC-4 / WB-4 = 6 Toilets

Water flow Rates Calculated

Sno	Location	WC	Wash Basin	Taps	WC- tap- Flow Litres per Minute	Wash Basin- Litres per minute	Taps- Litres per minute
1	Girls Hostel Room No - 213	1.43	11.86	2.35	41.96	5.06	25.53
2	Officers Toilet D - 106	1.4	3.14		42.86	19.11	
3	Faculty Block B & C	9.97			6.02		
4	Block B & C - Girls	1.4	11.47		42.86	5.23	
5	Block B & C - Boys	1.8	5.07		33.33	11.83	
6	Block A - Male	5.07	16.15		11.83	3.72	
7	Block A Female						
8	Block E - Male		5.43	4.89		11.05	12.27
9	Block E Female		7.75			7.74	
10	Block E Handicaped		5.03			11.93	
11	Block D Chemistry Lab			3.07			19.54
12	Block D Chemistry Lab			3.76			15.96
13	Block D Chemistry Lab			4.43			13.54
14	Block D - Male	3.38	13.59		17.75	4.42	
15	Block D Female	3.06	6.02		19.61	9.97	

It has been observed that flow in liters per minute of taps is very high and with provision of accessories it is required to be brought under 5 Liters and for further optimization it should be targeted to be reduced to 2 Liter per minute.

7. Observations And Recommendations

	Action steps for Water management – Design and Construction
A	Reduce water consumption through efficient fixtures.
1	Efficient plumbing design. Two stack system design for future to reduce STP energy consumption and pumped water energy.
2	Sub metering of water for separate uses
3	Efficient fixtures such as low flow taps, shower heads and toilets and **Water less urinals as per applicability in Gents Toilet.**
4	Efficient appliances for catering and other uses with specified water efficiency standards.
5	**Recycle** water using **Grey Water** systems. Being done–recycled water data be maintained. It is already in practice
6	**Rain water is captured in rain water harvesting pits- Maintenance of RWHS is required to be done periodically.**
7	Automatic shut off of Pump should be installed so that there is no wastage of water and Energy.
8	Log Book for running of Pump to be maintained
9	Check Leakage through internal audits-Weekly
	OPERATION & MAINTENANCE
1	As the building is operational, further reductions in water use can still be Made depending on how efficiently the building is run. Efficient fixtures and fittings reduce the amount of flow of water; however, it is equally important that water use is periodically assessed or audited to detect wastage caused either by the users or due to leakage. This will also help the building management in devising appropriate strategies for water conservation.
2	There is a potential for reduction and optimization of water simply and inexpensively by internally auditing water use and identifying appropriate water-saving measures
3	Install push button type individual manual urinal flushing system, Provide dual flushing systems and make users aware of the use of such installed systems.
4	Repair, replace leaking taps.

8. Rain Water Harvesting system

The following Rain Water harvesting system pits have been installed.

As per the data furnished, there are 3 nos. Rain water harvesting pits have been provided. Presently only one harvesting pit is maintained properly and two of these are clogged and need to be cleaned.

There is requirement of regular maintenance of these pits to clear these of any silt deposit etc. so that capacity and quality of water fed to these pits is not reduced.

As informed there is no rin off of rain water even during peak rain which is a point of appreciation

Sushant University

Supporting Documents

7.1.4: Water Conservation Facilities

Rainwater Harvesting Facilities at Sushant University

Sushant University, a beacon of innovative education and sustainable practices, has taken significant strides in integrating rainwater harvesting systems into its campus infrastructure. This initiative not only aligns with global sustainability goals but also addresses the pressing issue of water scarcity in urban areas. Rainwater harvesting at Sushant University exemplifies a practical approach to resource management, environmental conservation, and community education.

The Need for Rainwater Harvesting

Water scarcity is an escalating concern worldwide, and urban regions face acute shortages due to over-reliance on depleting groundwater resources and erratic rainfall patterns. Recognizing this, Sushant University has proactively adopted rainwater harvesting to augment its water supply, reduce dependency on external sources, and promote sustainable water management practices. This effort is part of a broader commitment to environmental stewardship and sustainability in higher education.

Implementation and Infrastructure

The rainwater harvesting system at Sushant University is meticulously designed to capture and store rainwater efficiently. The campus buildings are equipped with specially designed rooftops that funnel rainwater into a network of pipes leading to large underground storage tanks. These tanks, strategically placed across the campus, have a substantial storage capacity, ensuring a steady supply of harvested rainwater throughout the year.

The harvested rainwater undergoes a filtration process to remove debris and impurities, making it suitable for non-potable uses such as irrigation, flushing toilets, and cooling systems. By integrating this system, the university significantly reduces its reliance on municipal water supplies and groundwater, thus contributing to the conservation of these critical resources.

Environmental and Educational Impact

The environmental benefits of rainwater harvesting at Sushant University are manifold. Firstly, it mitigates the risk of flooding during heavy rains by channeling excess water into storage rather than letting it run off into drains. This reduces soil erosion and minimizes the strain on urban drainage systems. Secondly, by using harvested rainwater for irrigation, the university's lush green spaces and gardens are maintained without exerting pressure on groundwater reserves.

Beyond the environmental impact, Sushant University's rainwater harvesting facilities serve as a live educational tool for students and faculty. The system is integrated into the curriculum, providing hands-on learning opportunities for students in fields such as environmental science, civil engineering, and urban planning. Workshops, seminars, and tours are regularly conducted to demonstrate the workings and benefits of rainwater harvesting, fostering a culture of sustainability among the academic community.

Community Outreach and Future Prospects

Sushant University extends its sustainability ethos beyond the campus boundaries by engaging with the local community and neighboring institutions. The university regularly hosts awareness programs and training sessions on rainwater harvesting, encouraging local residents and businesses to adopt similar practices. This community-centric approach not only amplifies the impact of the university's efforts but also fosters a collaborative spirit in tackling environmental challenges.

Looking ahead, Sushant University plans to expand its rainwater harvesting facilities and enhance their efficiency. Future projects include the integration of smart technologies for real-time monitoring and management of water resources, ensuring optimal usage and minimal wastage. Additionally, the university is exploring partnerships with governmental and non-governmental organizations to further promote sustainable water management practices on a larger scale.

Conclusion

Rainwater harvesting at Sushant University is a testament to the institution's commitment to sustainability and innovation. By effectively capturing and utilizing rainwater, the university not only addresses its water needs but also contributes to environmental conservation and educates future leaders on the importance of sustainable practices. As the initiative grows and evolves, it will continue to set a benchmark for other educational institutions and communities aiming to implement effective and sustainable water management systems.

Open Well/Borewell Recharge at Sushant University

Sushant University, known for its forward-thinking approach to education and sustainability, has taken significant measures to ensure effective water management on its campus. Among these measures, the recharge of open wells and borewells stands out as a critical initiative. This practice not only addresses the urgent issue of groundwater depletion but also exemplifies the university's commitment to sustainable development and environmental stewardship.

Understanding the Importance of Groundwater Recharge

Groundwater is a vital resource, providing drinking water, irrigation for agriculture, and water for industrial processes. However, in many parts of the world, including urban areas like where Sushant University is located, groundwater levels are declining at an alarming rate due to over-extraction and insufficient recharge. This scenario necessitates innovative approaches to replenish these vital aquifers. Open well and borewell recharge is a practical and effective method to enhance groundwater levels by capturing and channeling surface water directly into the underground aquifers.

Implementation at Sushant University

Sushant University has adopted a comprehensive strategy for open well and borewell recharge. The campus is home to several strategically placed wells and borewells that are used not just for water extraction but also for recharging groundwater. The recharge process involves collecting rainwater and surface runoff, which is then filtered to remove debris and contaminants before being directed into these wells.

The implementation process begins with the construction of recharge pits around the open wells and borewells. These pits are filled with layers of gravel, sand, and other filtering materials to ensure that the water entering the wells is free from impurities. During the monsoon season, rainwater is directed into these recharge pits through a network of channels and pipes, allowing it to percolate down into the wells and subsequently into the aquifers.

Environmental and Educational Impact

The impact of open well and borewell recharge at Sushant University is substantial. Environmentally, this practice helps mitigate the decline of groundwater levels, ensuring a sustainable supply of water for various uses on campus. By enhancing groundwater recharge, the university reduces its dependency on external water sources, thereby conserving municipal water and promoting self-sufficiency.

Additionally, this initiative helps in maintaining the ecological balance of the area. Recharging groundwater supports the health of nearby water bodies and wetlands, which are crucial for biodiversity. It also prevents issues such as land subsidence, which can occur when groundwater is excessively depleted.

On the educational front, the recharge systems at Sushant University serve as practical learning tools for students. The systems are integrated into academic programs, allowing students from environmental science, civil engineering, and other related fields to gain hands-on experience. Workshops, seminars, and field visits are organized to educate

students and faculty about the importance of groundwater recharge, the methodologies employed, and the broader implications for environmental sustainability.

Community Engagement and Future Plans

Sushant University extends its groundwater recharge initiatives to the local community through outreach programs. The university collaborates with local residents, businesses, and other institutions to promote the adoption of similar practices. Community workshops and training sessions are held to demonstrate the construction and maintenance of recharge systems, fostering a collective effort toward sustainable water management.

Looking ahead, Sushant University aims to expand its recharge infrastructure and enhance its efficiency. Future plans include incorporating advanced technologies such as real-time monitoring systems to track groundwater levels and the effectiveness of recharge efforts. The university also seeks to forge partnerships with governmental and non-governmental organizations to scale up these initiatives and create a larger impact.

Conclusion

The open well and borewell recharge initiatives at Sushant University highlight the institution's proactive approach to addressing water scarcity and promoting sustainability. By effectively capturing and replenishing groundwater, the university not only secures its water needs but also contributes to the conservation of this precious resource. As these efforts continue to evolve, they will serve as a model for other educational institutions and communities, demonstrating the importance and feasibility of sustainable groundwater management practices.

Construction of Tanks at Sushant University

Sushant University, a leading institution committed to sustainability and innovation, has undertaken the construction of water tanks as part of its comprehensive water management strategy. These tanks play a crucial role in harvesting rainwater, storing potable water, and managing wastewater, reflecting the university's dedication to environmental stewardship and resource efficiency.

Purpose and Importance of Water Tanks

The construction of water tanks at Sushant University serves multiple essential purposes. Firstly, they provide a reliable storage solution for harvested rainwater, reducing dependency on external water sources and mitigating the effects of water scarcity. Secondly, the tanks ensure a steady supply of potable water for daily use, including drinking, cooking, and sanitation. Lastly, they aid in the treatment and reuse of wastewater, promoting a circular approach to water management.

In an era where water resources are under significant stress due to climate change and urbanization, the implementation of water tanks is a strategic move to enhance water security and sustainability on campus. By efficiently capturing and storing water, Sushant University not only meets its immediate needs but also contributes to long-term environmental conservation.

Design and Implementation

The design and construction of water tanks at Sushant University are guided by principles of efficiency, durability, and sustainability. The tanks are constructed using high-quality materials such as reinforced concrete and fiberglass, ensuring their longevity and resistance to environmental wear and tear. The design includes both above-ground and underground tanks to maximize storage capacity and optimize space utilization.

The construction process involves several key steps:

1. **Site Selection and Preparation**: Careful selection of sites for tank installation to ensure optimal water collection and minimal environmental impact. The sites are then prepared by leveling the ground and creating a stable foundation.

2. **Tank Construction:** Depending on the type of tank, construction methods vary. For concrete tanks, formwork is erected, and concrete is poured and cured to form a solid structure. For fiberglass tanks, prefabricated sections are assembled on-site.

3. **Plumbing and Connectivity:** Once the tanks are constructed, they are connected to the campus's existing water infrastructure. This involves installing pipes, pumps, and filtration systems to facilitate the collection, storage, and distribution of water.

4. **Quality Control and Testing:** The tanks undergo rigorous testing to ensure they are watertight and meet all safety and quality standards. This includes pressure tests, leak detection, and structural integrity assessments.

Environmental and Educational Benefits

The construction of water tanks at Sushant University yields significant environmental benefits. By harvesting and storing rainwater, the university reduces its reliance on municipal water supplies, thereby conserving this precious resource. The tanks also help in mitigating flooding during heavy rains by capturing excess runoff, which can then be used during dry periods.

From an educational perspective, the water tanks serve as a practical demonstration of sustainable water management practices. Students from various disciplines, such as environmental science, civil engineering, and urban planning, gain hands-on experience through involvement in the construction, maintenance, and monitoring of these tanks. The university organizes workshops, seminars, and field visits to educate students and the broader community about the importance and implementation of effective water storage solutions.

Future Prospects and Community Impact

Sushant University is committed to expanding its water tank infrastructure to further enhance its water management capabilities. Future plans include the integration of smart technologies, such as sensors and automated controls, to monitor water levels and usage in real-time, ensuring efficient management and minimal wastage.

Moreover, the university actively engages with the local community to promote the adoption of similar practices. By sharing knowledge and expertise, Sushant University aims to inspire other institutions and residents to implement sustainable water solutions, thereby contributing to a more water-secure and environmentally conscious society.

Conclusion

The construction of water tanks at Sushant University exemplifies the institution's proactive approach to addressing water scarcity and promoting sustainability. These tanks not only provide essential water storage but also serve as educational tools and environmental safeguards. As the university continues to innovate and expand its water management practices, it sets a benchmark for other educational institutions and communities, demonstrating the vital role of sustainable infrastructure in ensuring a resilient and resource-efficient future.

Wastewater Recycling Facility at Sushant University

Sushant University, a leader in sustainable education and innovative practices, has established a state-of-the-art wastewater recycling facility on its campus. This initiative underscores the university's commitment to environmental stewardship and resource conservation. By treating and reusing wastewater, the facility not only addresses water scarcity but also sets a benchmark for sustainable campus operations.

The Need for Wastewater Recycling

Water scarcity is a growing global challenge, exacerbated by rapid urbanization and climate change. Traditional water sources are under significant stress, making it imperative to explore alternative solutions such as wastewater recycling. Sushant University's facility aims to mitigate these challenges by treating wastewater generated on campus and repurposing it for non-potable uses. This approach not only conserves freshwater resources but also reduces the environmental footprint of the university.

Design and Implementation

The wastewater recycling facility at Sushant University is designed with advanced technologies and processes to ensure efficient and effective treatment. The system follows a multi-stage process that includes:

1. **Preliminary Treatment:** Wastewater is first passed through screens and grit chambers to remove large particles and debris. This initial stage helps protect downstream equipment from damage and clogging.

2. **Primary Treatment:** The water then enters primary settling tanks where suspended solids settle to the bottom, and oils and grease float to the surface for removal. This step significantly reduces the organic load of the wastewater.

3. **Secondary Treatment:** In this stage, biological processes are employed to degrade dissolved organic matter. Aeration tanks facilitate the growth of microorganisms that consume organic pollutants, transforming them into harmless by-products. The treated water then moves to secondary clarifiers where the biomass settles, leaving clearer water.

4. **Tertiary Treatment:** This advanced treatment stage includes processes such as filtration, chemical coagulation, and disinfection. Filtration removes remaining suspended particles, while coagulation aids in the aggregation of fine particles for easier removal. Finally, disinfection (often using UV light or chlorination) ensures the elimination of pathogens, making the water safe for reuse.

5. **Advanced Treatment and Reuse:** For specific applications, the water undergoes further treatment to meet higher quality standards. This may include reverse osmosis or activated carbon filtration. The recycled water is then stored in tanks and distributed for uses such as irrigation, toilet flushing, and cooling systems.

Environmental and Educational Impact

The environmental benefits of the wastewater recycling facility are profound. By treating and reusing wastewater, Sushant University significantly reduces its consumption of fresh water, conserving this vital resource. The facility also minimizes the discharge of untreated wastewater into the environment, thus protecting local water bodies from pollution.

Educationally, the facility serves as a live laboratory for students and researchers. It provides hands-on learning opportunities in fields such as environmental science, engineering, and sustainability studies. Students can observe the various stages of wastewater treatment, engage in research projects, and develop innovative solutions for water management challenges. Workshops, seminars, and guided tours are regularly organized to enhance understanding and awareness of sustainable practices among the university community and beyond.

Community Outreach and Future Prospects

Sushant University extends the benefits of its wastewater recycling initiative to the local community through outreach and collaboration. The university conducts awareness programs, training sessions, and demonstrations to promote the adoption of wastewater recycling practices among local residents, businesses, and institutions. This community-centric approach fosters a culture of sustainability and collective responsibility towards water conservation.

Looking forward, Sushant University plans to expand and upgrade its wastewater recycling facility. Future projects include the integration of smart technologies for real-time monitoring and optimization of the treatment processes, enhancing efficiency and effectiveness. The university is also exploring partnerships with governmental and non-governmental organizations to scale up wastewater recycling efforts and contribute to broader water management strategies.

Conclusion

The wastewater recycling facility at Sushant University is a testament to the institution's proactive approach to sustainability and resource management. By effectively treating and reusing wastewater, the university not only addresses its water needs but also demonstrates a model of environmental responsibility. As the facility continues to evolve and expand, it will inspire other institutions and communities to adopt similar practices, contributing to a more sustainable and water-secure future.

Sushant University

Report for Checking of Water Hardness & TDS Level

KING Mineral RO Water Purifiers

KING RO SALE & SERVICE (Regd.)

D-14, Masudpur, Harijan Basti, B-8 & 9, Near Gate No. 1, Vasant Kunj, New Delhi - 30
Tel. : 011-65154210, Mob. : +91-9560030964, 9560030965

Date: 25/09/2023

TDS OF 250 LPH RO PLANT

1.	BOYS HOSTEL	55
2.	GIRLS HOSTEL	58
3.	A block	77
4.	B block	62
5.	D block	80

TDS OF 25 LPH RO System

1.	First Floor LAW	72
2.	Ground Floor	69

E –Block

1.	Ground Floor	62
2.	Frist Floor	65
3.	Second Floor	60
4.	Third Floor	75
5.	Fourth Floor	79
6.	Fifth Floor	63

79

A C

V·C office 670 (USED ONLY FOR WASHING). ONLY PURIFIER NO RO)

KING RO SALE & SERVICE * VASANT KUNJ * New Delhi-110070 *

SUSHANT UNIVERSITY * SECTER-55

Water Policy
Sushant University

Water Policy of Sushant University, Gurugram

The Sushant University Gurugram is committed and will continue in future to modelling sustainability and practicing effective stewardship of institutional consumption of water use for all requirement while providing an excellent learning, teaching and research environment.

Water is essential to university operations to support all work, study and research. All members of the campus community will endeavour to use water in the most efficient manner possible. water use will be managed by all users. All departments, students, staff and also visitors will be encouraged to reduce individual and university water foot print through awareness and adoption of the most efficient procedures and practices.

The campus committee will be established on water use and it will make informed choices to minimize the institution's ecological footprint associated with water, with a goal of continuous improvement and reduced operating costs.

The university has policy to reduce, reuse and recycle water for optimisation of water foot print.

Any process, procedure or equipment that does not use water efficiently, will be reviewed and changes implemented by appropriate responsible parties.

All the waste water will be treated and re used for appropriate application

All equipment procurement decisions will include review of water consumption specifications. Where possible the lowest flow models will be purchased.

The university will identify water inefficiencies and work towards continuous improvement and reductions.

There will be a mechanism for reporting water leaks.

All rain water will be harvested in Rain water harvesting pits. Requirement and Maintenance of Rain water harvesting pits will be done on continual basis.

There will be regular awareness programs on water scarcity and water use reduction.

Policy and procedures with goals of water efficiency and continuous improvement will be regularly monitored.

SUSHANT UNIVERSITY ★ SECTER-55 GURUGRAM

University will integrate water management into organizational structure with clear delegation of responsibility for water consumption.

University will prepare a water Management Plan with implementation across campus.

University will develop a communication plan to share with the campus community and all relevant stake holders including visitors on water use.

University will target to optimise water use for horticulture use and in future native species shall be encouraged to be planted under plantation program and turf area shall be optimised for water conservation.

University will make plan to capture water from Unitary Ac units and re use water for appropriate purpose.

This policy is effective from 1st September 2022 and will be reviewed as per the requirement.

Registrar

SUSHANT UNIVERSITY * SECTER-55, GURUGRAM *