WATER CONSEVATION REPORT

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About: Water Conservation Report

Quantum University stands as a beacon of sustainable water management, showcasing a commitment that extends beyond rainwater harvesting to include a state-of-the-art Sewage Treatment Plant (STP) boasting a capacity of 240 kiloliters per day (KLD). This STP serves as a cornerstone in the university's comprehensive water strategy, embodying its dedication to environmental responsibility and self-sufficiency.

In tandem with rainwater harvesting initiatives, the STP plays a crucial role in addressing wastewater concerns by effectively treating domestic effluent, averaging 240 KLD during the Financial Year 2022-
23. The treated effluent finds purpose in responsible discharge onto the university's land, actively contributing to plantation initiatives and bolstering overall environmental sustainability.

This integrated water management system not only champions rainwater recharge into open wells and straight wells but also underscores the responsible treatment and reuse of domestic wastewater. Quantum University's dedication to holistic water conservation, efficient resource utilization, and environmental stewardship is exemplified through the combined efforts of rainwater harvesting and sewage treatment. This multi-faceted approach not only sets a commendable example but also establishes Quantum University as a leader in sustainable water practices within the realm of educational institution

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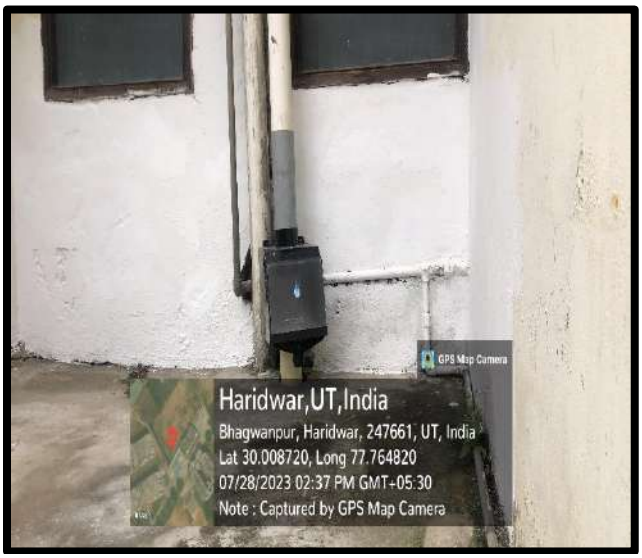
Rainwater Harvesting

Quantum University the is at the forefront of sustainable practices, adopting rainwater harvesting with recharge into open wells and straight wells to ensure responsible water management. This holistic approach not only involves collection of rainwater from impermeable surfaces like roofs through gutters and downspouts but also focuses on replenishing groundwater resources.

The integration of first flush diverters in the system plays a crucial role in eliminating initial pollutants, ensuring that the recharged water is cleaner and environmentally friendly. Prior to redirection into open wells or straight wells, the harvested rainwater undergoes filtration to remove debris, contributing to the overall quality of the recharged groundwater.

Presenting Image of Rainwater Filter installed at Quantum University



For open wells, well-designed channels or pipes guide the rainwater, promoting effective groundwater recharge. In the case of straight wells, strategically placed boreholes allow rainwater to percolate directly into the ground, actively participating in the natural replenishment of aquifers.

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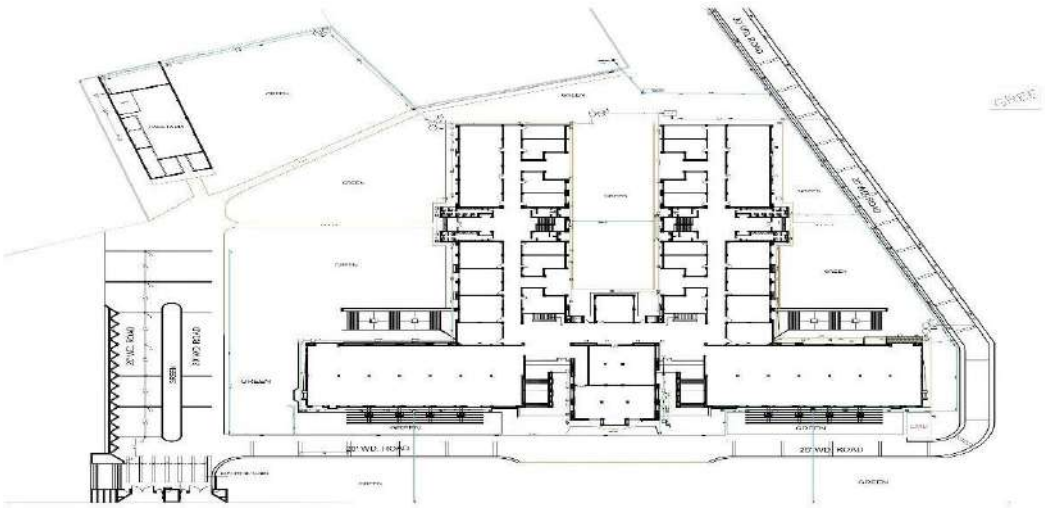
The system also incorporates overflow mechanisms to prevent flooding during periods of heavy rainfall.



Presenting The Network Rainwater Drainage System

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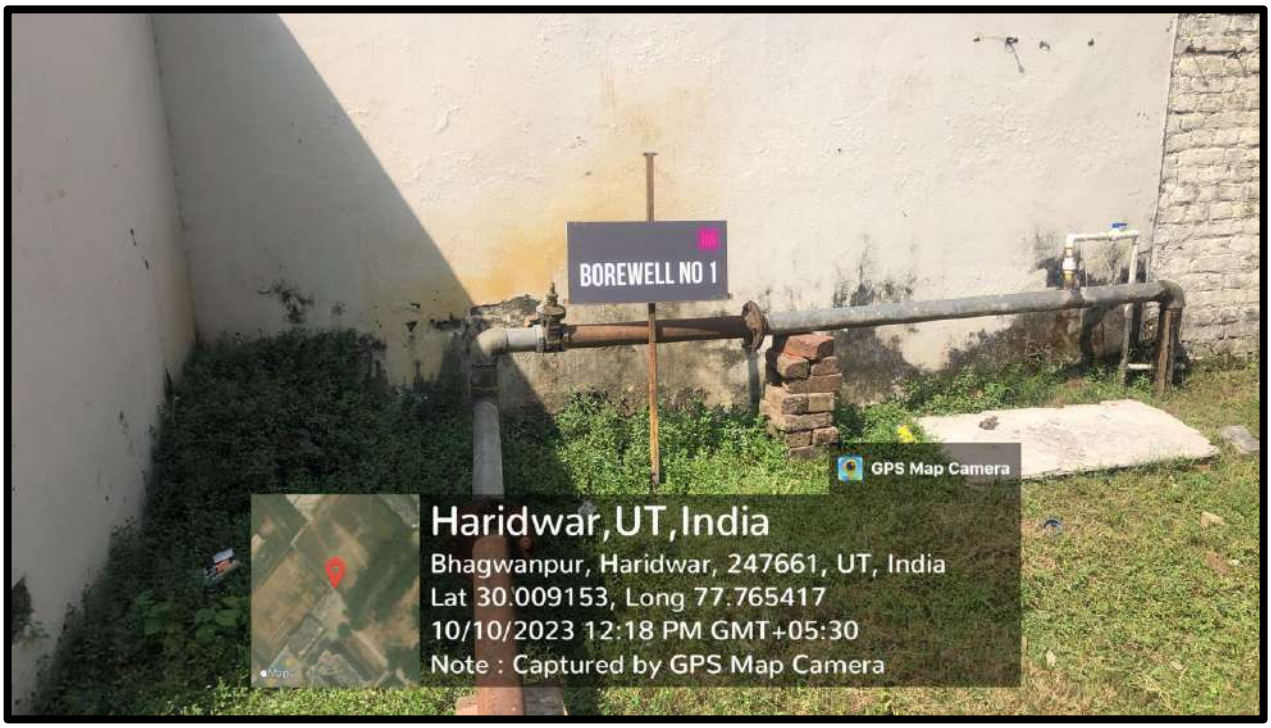
Borewell/Open Recharge Well

Borewell

The University exclusively relies on groundwater for domestic purposes. To facilitate this, the University has tapped into a fresh and plentiful source of water. The Water Supply System, ingeniously designed, efficiently serves the entire campus by drawing water from three bore wells. This strategic approach ensures a sustainable and reliable supply of freshwater for the University's domestic needs.

Presenting Images Borewell Installed at Quantum University



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Open Recharge Well

The sustainable practice yields numerous benefits, including direct groundwater recharge, minimized surface runoff to prevent erosion, enhanced water quality

through natural filtration, and heightened community resilience in the face of water scarcity. The university's commitment to this approach involves a comprehensive process, including site assessment, thoughtful design, adherence to local regulations, community engagement, and regular maintenance

Presenting the image of Straight recharge well

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Presenting the image of open recharge well

By embracing rainwater harvesting with recharge, Quantum University aligns with core principles of water conservation, contributing to a resilient and self-sufficient water management system that benefits both the institution and the surrounding community.

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Construction of tanks and bunds

Quantum University demonstrates a robust commitment to sustainable water management by relying on a ground water system, primarily sourced through three strategically positioned bore wells within the campus. The significance of these bore wells lies in their role as the major water source for the entire university.

To optimize water usage, the campus employs a well-organized system where water initially accumulates in a sizable underground storage tank with a capacity of 40,000 liters. This tank serves as the primary reservoir, ensuring a substantial and reliable supply for the diverse water needs of Quantum University.

Presenting the image of underground water tank

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Complementing this underground storage, the campus features an innovative approach by installing upto 8,000-liter rooftop 57 overhead water storage tanks on every building. This decentralized distribution system ensures efficient water availability throughout the campus, promoting sustainability and accessibility. The rooftop tanks not only facilitate convenient access to water but also contribute to an effective and well-balanced water distribution infrastructure.

Table Water Storage capacity details of university

Area/Tank Water Capacity o	Water Tanks & their capacities
A Block	4 Nos X 8000 Litres
B Block	4 Nos x 8000 Litres
C Block	1 Nos x 2000 Litres
D Block	2 Nos x 3000 Litres
Health Science Laboratory	1 Nos x 2000 Litres
Mess	4 Nos x 800 Litres
L.M.D.	1 Nos x 2000 Litres
Canteen	3 Nos x 3000 Litres
Hostel 1	9 Nos x 1800 Litres
Hostel 2	9 Nos x 1800 Litres
Hostel 3	3 Nos x 6000 Litres
Girls Hostel	14 Nos x 1800 Litres
Guest House	2 Nos x 4000 Litres

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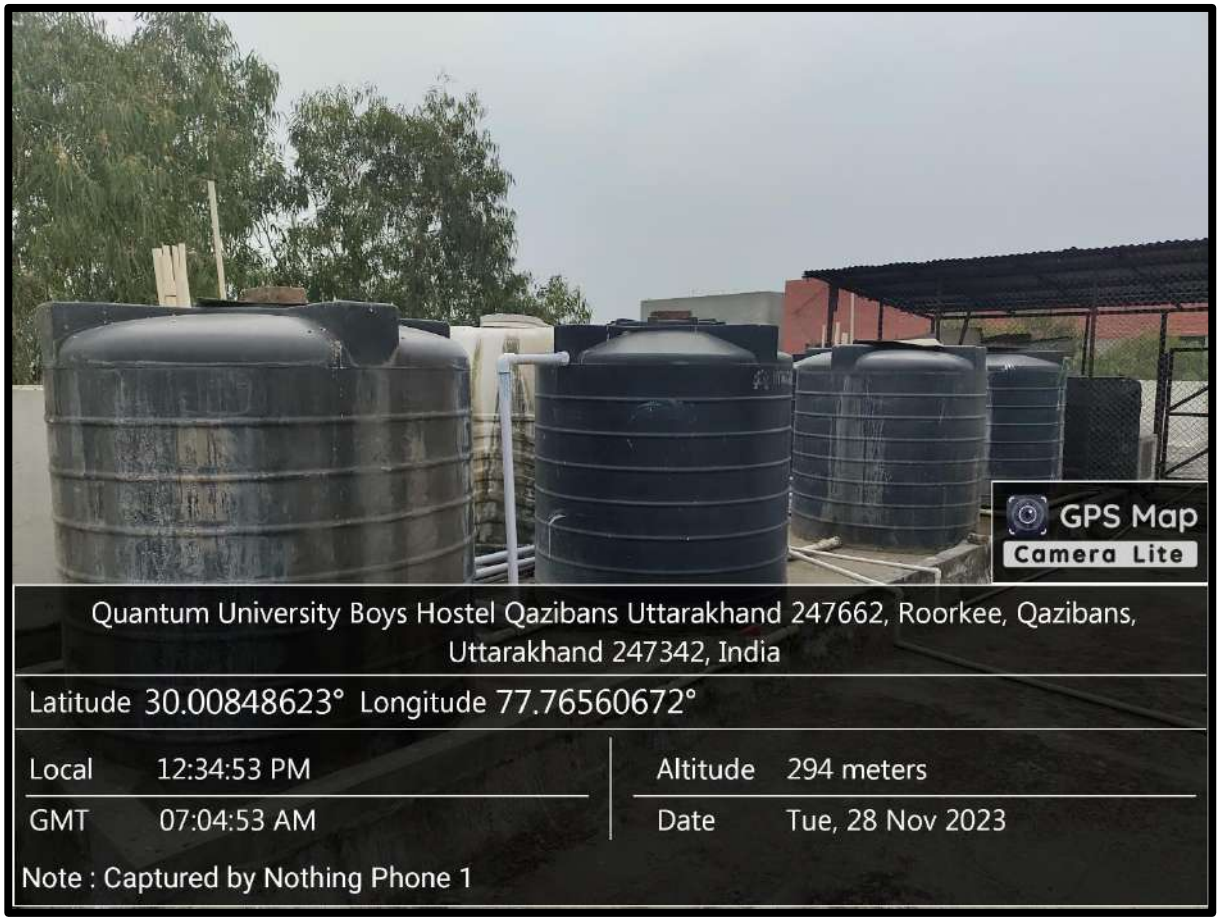
Quantum University's emphasis on a diversified water storage system reflects its dedication to addressing the dynamic water requirements of its community. The integration of bore wells, underground storage, and rooftop tanks underscores a holistic strategy toward water conservation and resilience. This initiative aligns with the university's commitment to environmental sustainability and responsible resource management, ensuring a reliable and efficient water supply for the campus community. Regular monitoring and maintenance of these water storage facilities exemplify Quantum University's proactive approach to sustaining an eco-friendly and self-reliant campus environment.

PRESENTING FEW IMAGES OF STORAGE TANK ON THE ROOF TOP



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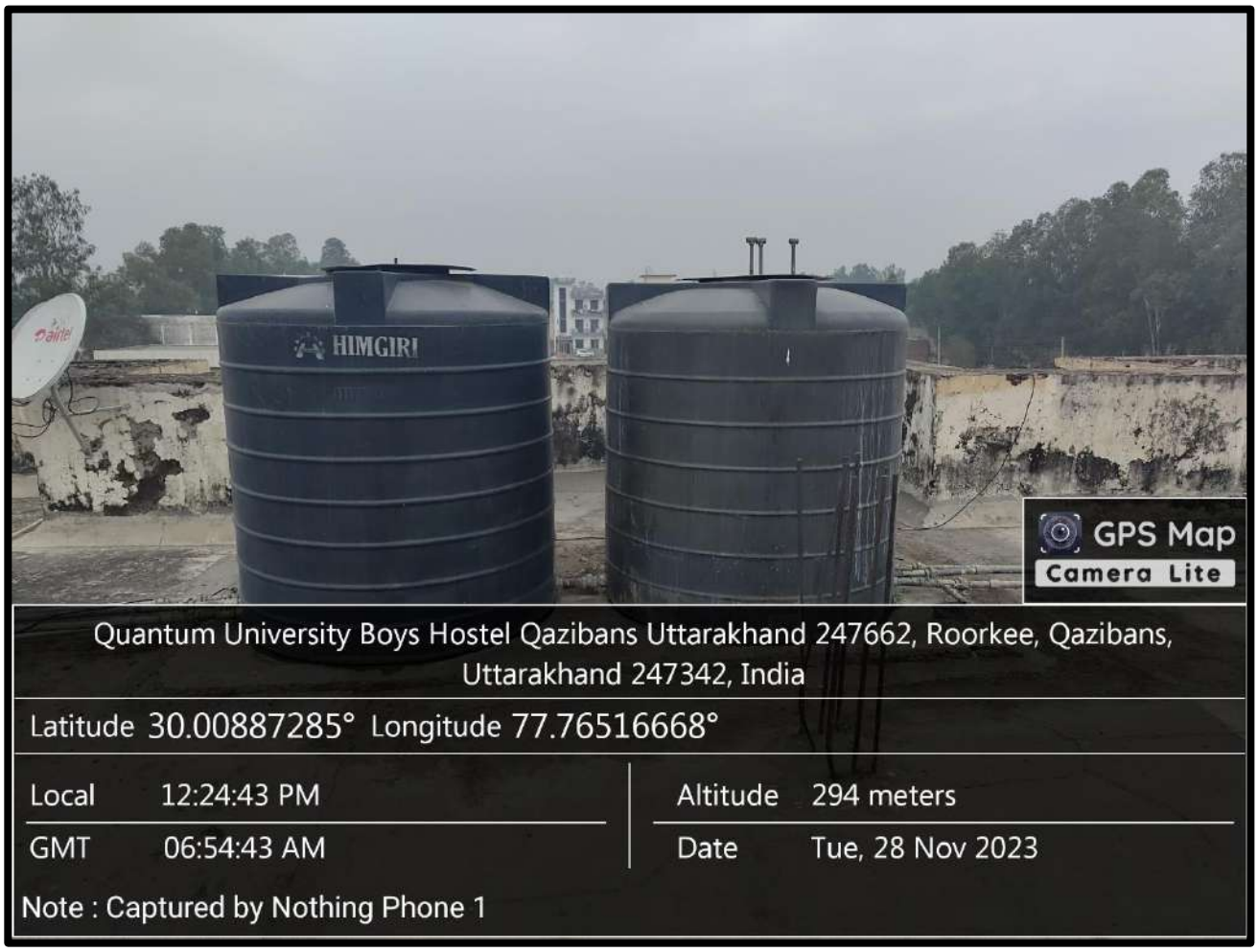

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Wastewater recycling

Quantum University demonstrated a proactive commitment to environmental sustainability by addressing domestic effluent production. The university averaged 80 kiloliters per day (KLD) of domestic effluent, prompting the implementation of a robust Sewage Treatment Plant (STP) with a capacity of 240 KLD. This facility efficiently processes the effluent, adhering to responsible practices, and the treated water is thoughtfully discharged onto designated areas of the university's land. This not only meets ecological standards but also contributes to plantation initiatives across various pockets of the campus.

Presenting the images of STP Installed at Quantum University

Quantum University holds a profound commitment to environmental conservation and has undertaken significant initiatives to address water scarcity issues within its campus. The comprehensive strategy involves treating all

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wastewater generated on the campus, recycling the treated wastewater for activities like flushing and irrigation, and utilizing the generated sludge as organic fertilizer to nourish plants. This integrated approach not only diminishes the demand for fresh water but also minimizes reliance on chemical fertilizers.

In the face of global water shortages, recognized as a critical challenge by the United Nations, Quantum University is actively contributing to addressing this concern. By treating and recycling 100% of the wastewater generated within its premises, the university is making a substantial impact. The pledge to reduce, recycle, and reuse water underscores the institution's dedication to sustainable water management practices, aligning with the broader goals of environmental responsibility and resource conservation.

The Sewerage Treatment Plant at Quantum University employs a diverse range of treatment schemes to efficiently manage wastewater and ensure environmental sustainability.

The treatment process unfolds through various stages, each contributing to the overall effectiveness of the system:

1. **Bar Screen/Oil & Grease Tanks:**
    - Initial screening to remove large debris and separate oil and grease from the wastewater.
    - Enhances the efficiency of downstream treatment processes.

2. **Equalization Tank/MBBR Tank (Moving Bed Biofilm Reactor):**
    - Equalization tank evens out variations in flow and load, preventing shock loads to downstream processes.
    - MBBR tank utilizes microbial biofilm to promote biological treatment, breaking down organic pollutants.
3. **Compact Sewerage Treatment Plant:**
    - Efficiently treats wastewater in a space-effective manner.
    - Utilizes advanced technologies to ensure thorough treatment.
4. **Multi-Media Filter:**

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- Further refines the treated water by removing suspended particles and impurities.
- Enhances water quality before advancing to subsequent treatment stages.

5. **Chlorine Dosing:**
    - Application of chlorine to disinfect the treated water, eliminating harmful microorganisms.
    - Ensures the production of safe and sanitized water for designated uses.
6. **Dispose Off:**
    - The final stage in the process involves the responsible disposal of treated water to approved outlets or for beneficial reuse.
    - Compliance with environmental regulations and commitment to sustainable practices.

This comprehensive approach to wastewater treatment at Quantum University reflects a commitment to cutting-edge technologies and environmentally conscious practices. By incorporating various treatment schemes, the Sewerage Treatment Plant not only meets regulatory standards but also contributes to the university's broader mission of reducing environmental impact and promoting responsible water management.

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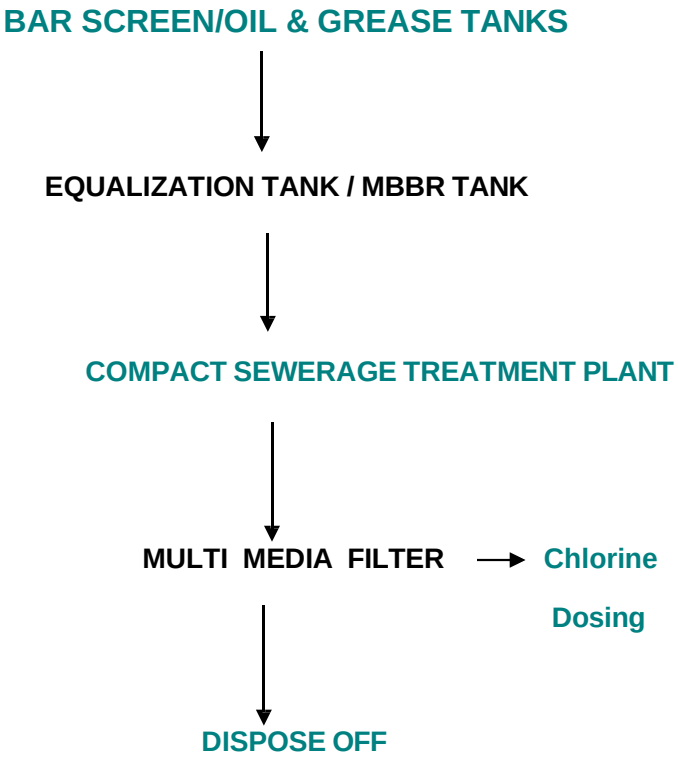
VARIOUS SCHEME OF TREATMENT



To efficiently address the water requirements for greenery, Quantum University employs a thoughtful approach that acknowledges the necessity of water supply while minimizing losses due to evaporation and over-supply. The treated water from the Sewage Treatment Plant (STP) is repurposed for watering plants and gardens, providing a sustainable solution.

The system involves the installation of irrigation lines strategically placed throughout the garden areas. These lines deliver water directly to the root systems of plants, ensuring a gradual and controlled supply. This method of targeted irrigation is highly efficient, as it minimizes water wastage by delivering water precisely where it is needed.

Unlike traditional watering methods that can result in considerable water loss, the irrigation system at Quantum University optimizes water usage. By using treated water from the STP, the system not only conserves precious drinking water but also reduces the risk of over-supply and evaporation.

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In essence, the university's approach to garden irrigation aligns with principles of sustainability and responsible water management. By directly hydrating plants with treated water, Quantum University not only supports the growth and maintenance of greenery but also demonstrates a commitment to minimizing water wastage in its landscaping practices.

Presenting images of watering garden/Plant Through STP Treated water

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Maintenance of water bodies and distribution system in the campus

At Quantum University, Maintaining water bodies and distribution systems on a campus is paramount for sustainable water management. Regular inspections identify issues like leaks and contamination. Water quality monitoring ensures safety standards are met, prompting action if parameters deviate. Preventive maintenance on pipes and valves ensures continuous flow. Promoting water conservation through efficient fixtures reduces consumption. Proper landscaping prevents erosion and provides wildlife habitat. Effective waste management prevents pollution. Emergency response plans address incidents promptly. Community engagement fosters stewardship. Compliance with regulations ensures adherence to standards. Prioritizing these practices ensures longevity, efficiency, and sustainability, fostering a healthier environment and resilient campus infrastructure.

Presenting Few Images of Water distribution system in the Campus

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