



Manipal University Jaipur Water Use Policy

1. Introduction

Water is a finite and invaluable resource essential for life and the functioning of our society. As a responsible institution, Manipal University Jaipur acknowledges the importance of conserving water and practicing sustainable usage. This policy outlines the guidelines, responsibilities, and strategies for promoting efficient water use and conservation within Manipal University Jaipur. It aims to ensure responsible water management, advance sustainability, and reduce the university's environmental impact.

2. Objectives

- To minimize water consumption across all Manipal University Jaipur facilities.
- To promote awareness and education on water conservation within the university community.
- To adopt best practices for water management, including efficient technologies and infrastructure.
- To ensure compliance with local, state, and national regulations and standards for water usage.
- To raise awareness amongst stakeholders about sustainable water use.

3. Responsibilities

a. Directorate General Services & Administration:

- Develop and enforce water conservation strategies.
- Allocate necessary resources for the implementation of water-saving measures.
- Regularly monitor and assess water usage across campus.

b. Facilities Management:

- Implement efficient plumbing, fixtures, and irrigation systems.
- Conduct regular maintenance and repairs to prevent water wastage.
- Investigate and adopt new technologies for water conservation.

c. Faculty, Staff, and Students:

- Encourage responsible water use practices among the university community.
- Participate in awareness campaigns and initiatives.
- Report any water leaks or inefficiencies promptly.



4. Water Use Guidelines

a. Landscaping and Irrigation:

- Use native and drought-resistant plants in landscaping.
- Schedule irrigation during off-peak hours to minimize water loss due to evaporation.
- Utilize rainwater harvesting and recycled water for irrigation where possible.

b. Infrastructure and Buildings:

- Install low-flow faucets, toilets, and showerheads in all buildings.
- Regularly inspect and repair water leaks promptly.
- Explore the use of greywater systems for non-potable uses.

c. Educational Programs:

- Integrate water conservation topics into the curriculum and awareness campaigns.
- Offer workshops, seminars, and informational materials on water-saving practices.

5. Monitoring and Reporting

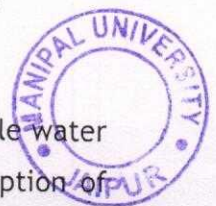
- Implement a system to monitor water usage across various university departments and facilities.
- Regularly analyze and report on water consumption and conservation efforts.
- Encourage feedback from the university community to improve water conservation initiatives.

6. Compliance and Review

- Ensure compliance with local, state, and national water use regulations.
- Conduct periodic reviews to assess the effectiveness of the water conservation measures.
- Adjust policies and practices as needed to improve conservation efforts.

7. Conclusion

The Water Use and Conservation Policy seeks to promote sustainable and responsible water management within the university. Through a culture of awareness and the adoption of





efficient technologies, Manipal University Jaipur strives to contribute to a more sustainable environment for current and future generations. This policy will be communicated to all staff, students, and stakeholders and will undergo periodic reviews to align with evolving water conservation standards and best practices.

Version History

Number	Year	Major Revision
Version 4.0	2024	Focus on awareness
Version 3.0	2022	Enhancement of water-saving measures
Version 2.0	2021	COVID 19 Regulations
Version 1.0	2020	Initial policy

Approval





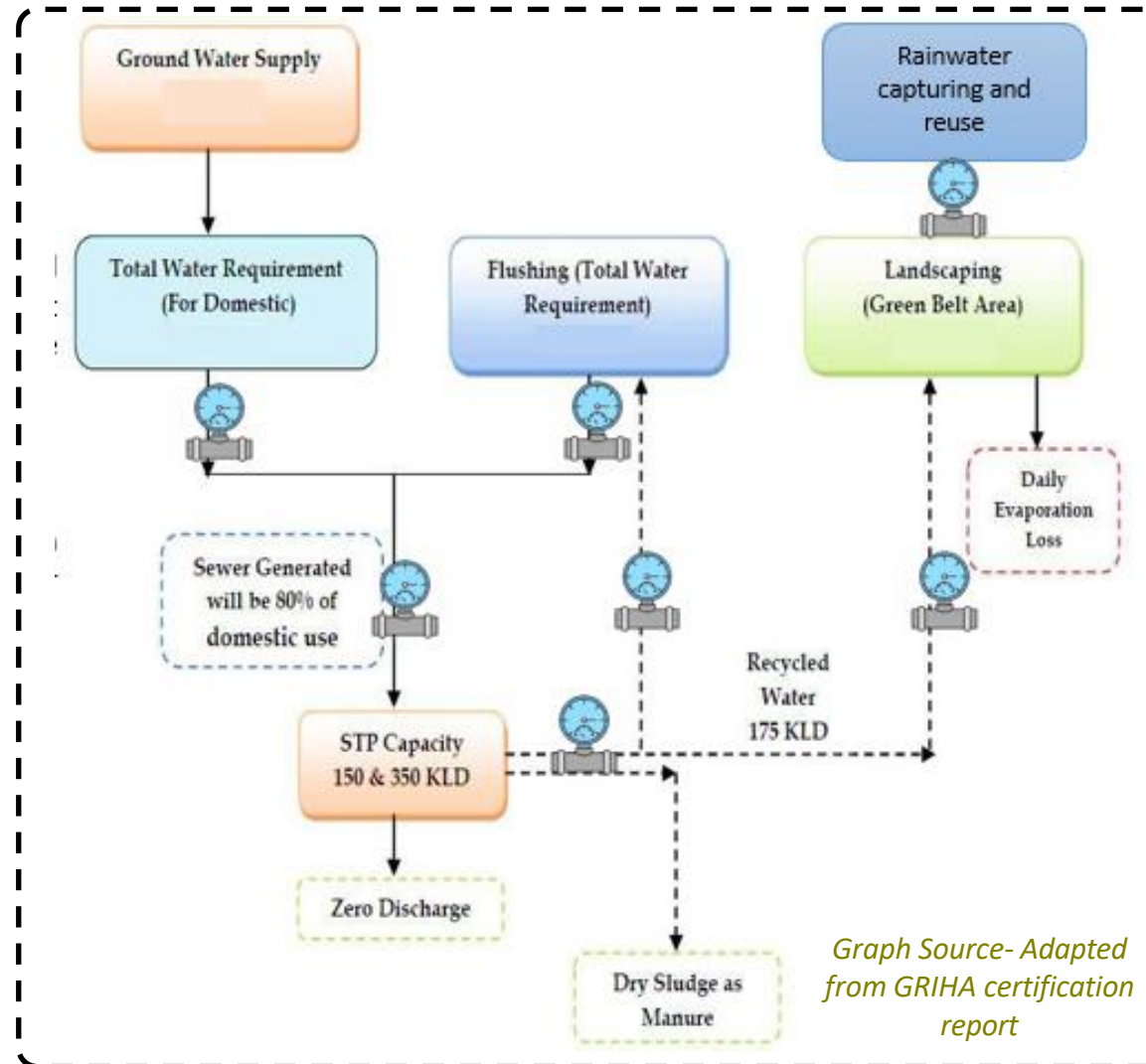
Water Consumption and Treatment 2022-2023

Criteria- Water



Water Source and Distribution in MUJ Campus

Manipal university has an Integrated Water management strategies that are designed & implemented for the campus mainly focusing on triple bottom line benefits i.e., social, economic and environmental benefits. This created a flexible, resilient water infrastructure which helped MUJ progress towards water neutrality.



Graph Source- Adapted from GRIHA certification report



OBSERVATIONS:

The groundwater supply meets the water demand for MUJ University, designed at 220 liters per capita per day (LKD). This total water requirement is divided into domestic use, flushing, and landscape irrigation. Groundwater is used to meet domestic needs, while treated water from the Sewage Treatment Plant (STP) supplies water for flushing and landscaping. Additionally, rainwater from Rainwater Harvesting (RWH) tanks is utilized for irrigation. Dry sludge from the STP is converted into manure for on-site landscaping.



RECOMMENDATIONS

Water meters to be installed at all water sources/distribution lines at every building in the campus to monitor water consumption



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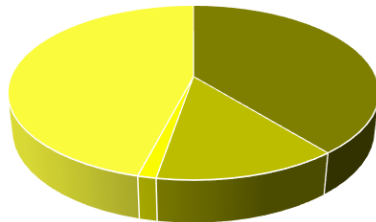
Criteria- Water



Water Consumption

- MUJ consumes 59965 kL/year of water annually for the university blocks & 53873 kL/year for hostel blocks
- Total water consumption is 113,838 kL/year
- 100% wastewater is treated on site and used for flushing and landscape purposes within the campus

Water Consumption 2022-23



■ 200 KLD (MUJ)
 ■ 80 KLD (Housing)
 ■ 150KLD
 ■ 350KLD



University (Administrative + Academic Blocks) data for domestic and flushing comes is shared by MUJ

To reduce the water usage, all the building toilets in MUJ are equipped with automatic, low flow fixtures and low flush fixtures. These fixtures when compared with conventional fixtures can save significant amount of water.

FIXTURE TYPE	CONVENTION AL FLOW/ FLUSH FIXTURE FLOW RATE LPF/LPM	FIXTURE FLOW RATES INSTALLED IN MUJ LPF/LPM	Estimated Water Savings (%)
WC Flush	≤ 6 LPF	3 & ≤6 LPF	50%
Sensor Urinals	≤ 3.8 LPF	≤ 0.5 LPF	86%
Restroom Faucets	≤ 9.4 LPM	≤ 2.75 LPM	70%
Pillar cock	≤ 9.4 LPM	≤ 2.75 LPM	70%
Health faucet	≤ 9.4 LPM	≤ 6.4 LPM	32%
Kitchen Faucet	≤ 9.4 LPM	≤ 7.5 LPM	20%



OBSERVATIONS:

The total water consumption in the campus is segregated for domestic and flushing purposes. 80% of waste-water from domestic and flushing purpose is treated and this recycled water is used for landscape irrigation and the dry sludge generated in the sewage treatment plant is used as manure for landscape



RECOMMENDATIONS

Regular monitoring of water use at the building level and regular maintenance checks for leaks will ensure additional water savings



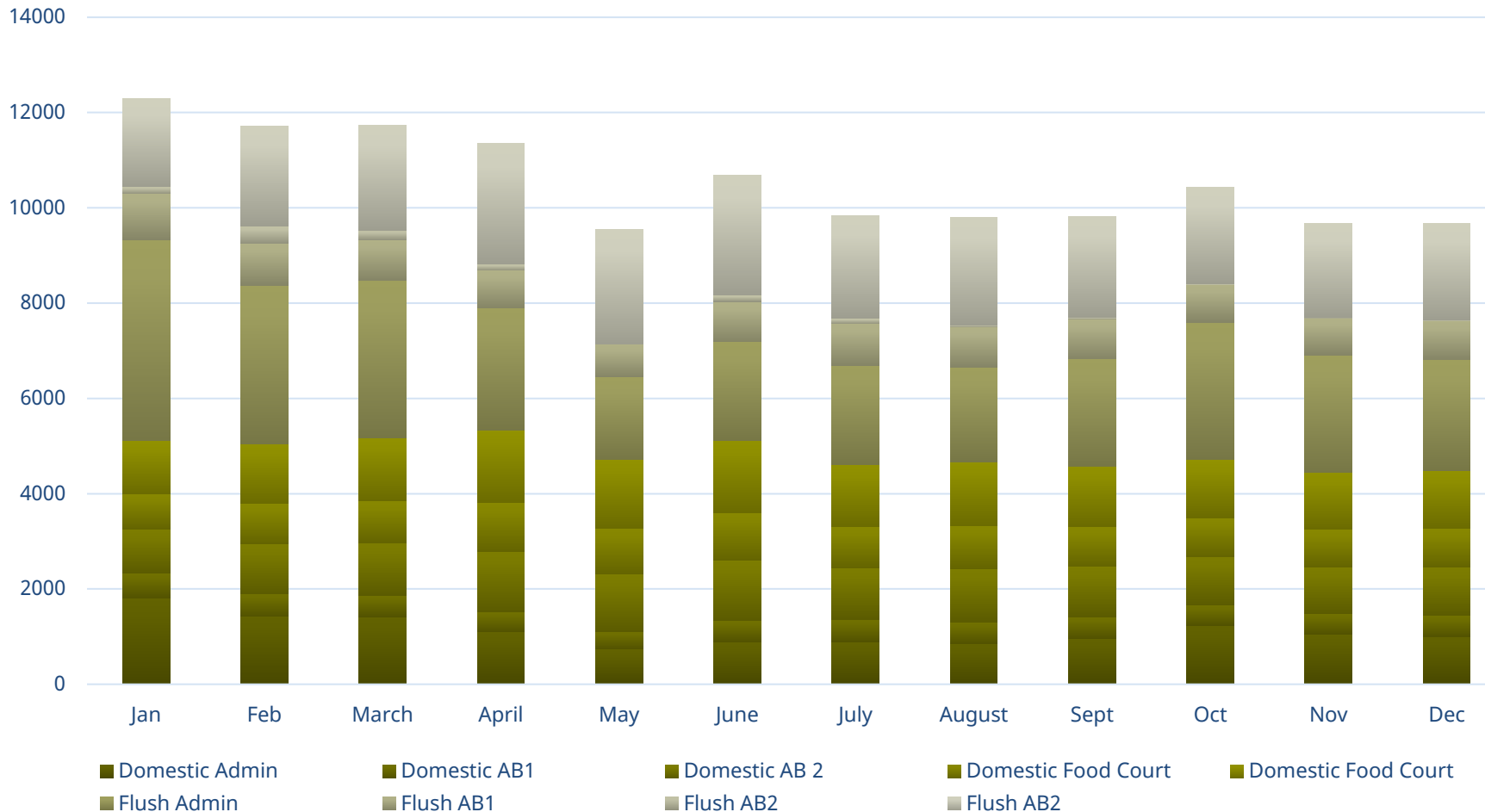
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Monthly Water Consumption: Admin, AB-1 and AB-2, Hostels January 2023 to December 2023



OBSERVATIONS:

- Seasonal Trends and Efficiency: Although there are minor fluctuations, summer months (May to August) see slightly reduced consumption. This might be due to reduced campus activity or more efficient water usage during this period.
- Consistent Distribution Across Categories: Each category, whether domestic or flushing, maintains a similar volume of water use each month, indicating that water distribution patterns across the campus are predictable and well-regulated.



RECOMMENDATIONS

The chart highlights a well-managed water system with minimal variation in monthly consumption, which could imply that water-saving measures or consistent practices are in place.



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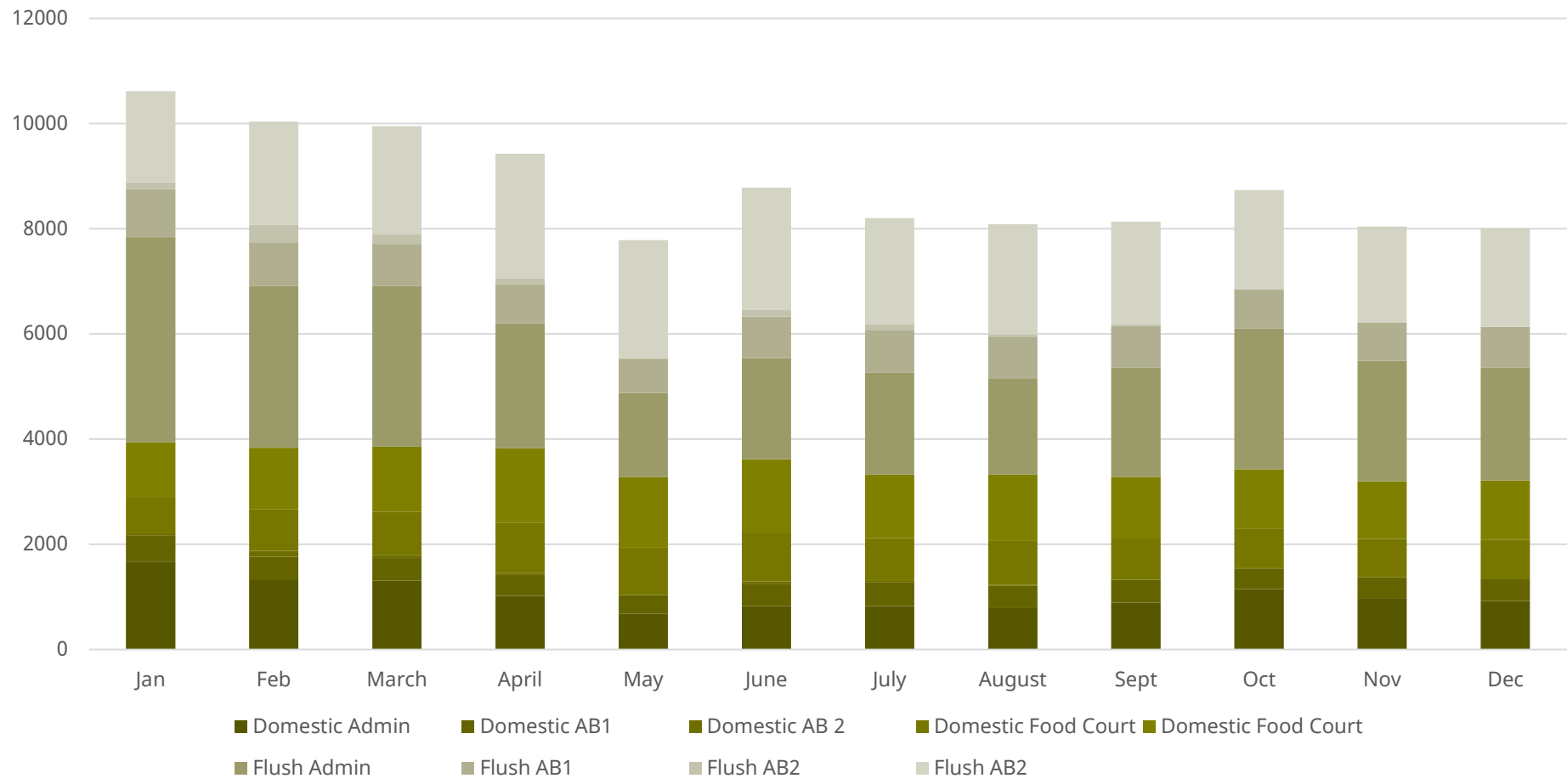
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Monthly Water Consumption: Admin, AB-1 and AB-2, Hostels January 2022 to December 2022

Chart Title



OBSERVATIONS:

- Consistent Usage: Water usage appears to be relatively stable across the months, with only slight fluctuations. This indicates a steady demand throughout the year.
- Highest Consumption in Jan and April: The highest total water usage is seen in January and April, slightly exceeding other months, which could correspond to seasonal factors or increased campus activities.



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Sewage Treatment plant

Manipal University Jaipur has zero discharge waste-water policy. Hence 100% of the wastewater generated on site is treated to tertiary standards and reused within the campus for various purposes like Flushing, **cooling tower makeup**, Horticulture etc.

MUJ has two Sewage treatment plants with 150kLd and 350 kLd respectively. Membrane Bioreactor(MBR) type Sewage Treatment plant with total capacity of 500 kLd is commissioned at MUJ university campus considering the future developments & excess wastewater from hostels.

A standalone 350 kLd Sewage Treatment plant is commissioned to serve only the Hostel blocks, excess wastewater is sent to University STP. Wastewater treated on site will have projected water quality standards meeting central pollution control board (CPCB) norms.



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RECOMMENDATIONS

HYPOTHESIS-

If the treated water used for landscape can be reduced by 10- 15% then this water can be used for flushing purpose as the 2019 water consumption was flushing is not 100% catered by treated water



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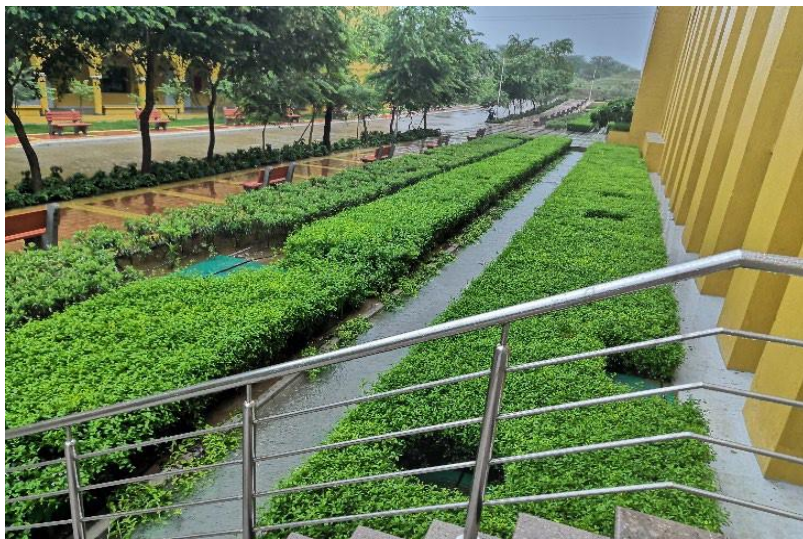
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Key Points

USAGE OF RECYCLE WATER



- Zero Water Discharge Campus (Water Recycling)
- Sludge From STP Used As Manure For Landscaping. Reusing the debris waste for the pathways and road areas base compaction
- Vehicle Washing
- Gardening and Horticulture

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WATER EFFICIENT APPLIANCES



Water Aerator Installed in all Taps for handwash



Sensor Based Urinals



Storm water drain and Drip Irrigation



BENEFITS

- **Reduced Water Bills:** By using less water, these appliances lower monthly utility costs.
- **Environmental Conservation:** Lower water consumption reduces strain on local water resources and supports environmental sustainability.
- **Energy Savings:** Many water-efficient appliances also use less energy, especially those involved in heating water, such as washing machines, further decreasing energy bills and carbon footprints.



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BENEFITS

WATER USE REDUCTION WITH WATER EFFICIENT FIXTURES:

Some of the key highlights of sustainable water management at MUJ:

- Potable water use reduction by using water efficient fixtures
- Recycling 100% of waste water generated on site and reuse on site.
- Use of treated water for non-potable water requirement
- Reduction in landscape water use by choosing right species of plants which are regional and adaptable to local conditions & reduction of turf areas
- Use of Highly efficient Irrigation equipment like micro drips for landscape needs
- A well-developed stormwater management infrastructure to capture and use rainwater for both building and landscape needs

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