Shoolini University

6 CLEAN WATER AND SANITATION

WATER-CONSCIOUS BUILDING STANDARDS



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6.3.4. Water-conscious building standards

Shoolini University applies water-conscious building standards to design and construction new and existing infrastructure to minimise water consumption and reduce water wastage. These standards incorporate water-efficient fixtures, rainwater harvesting and storage, permeable surfaces for groundwater recharge, efficient rainwater drainage, dual-flush or low-flow toilets, low flow taps and systems for the reuse of harvested rainwater for irrigation, flushing and other non-potable applications. Building projects incorporate these water-management provisions as part of sustainable campus development.

Table 1: Initiatives Taken for Water-Efficient Building Standards to Minimise Water Use

S. No.	Initiative	Implementation Area	Water-Saving Contribution
1	Sensor-Based Taps	Installation of automatic sensor-operated taps in campus washrooms	Reduces water wastage by automatically stopping water flow when not required
2	Dual-Flush Toilets	Installation of dual-flush systems in campus washrooms.	Reduces water consumption during toilet flushing.
3	Low-Flow Taps	Use of water-efficient taps in washrooms and handwashing areas.	Minimises unnecessary water flow and wastage.
4	Sustainability in Design and Construction	Rainwater harvesting rooftop systems to collect and manage rainwater on campus.	Supports water conservation and reduces dependence on external water sources.
5	Harvested rainwater supporting Construction Activities	Implementation of groundwater recharge measures and permeable surfaces across suitable campus areas.	Supports groundwater replenishment, reduces surface runoff, and promotes sustainable water conservation.
6	Water-Efficient Landscaping	Water-conscious landscaping and irrigation practices in campus green spaces.	Reduces water requirements for maintaining gardens and plants.

7	Wastewater treatment and reuse	Treatment of campus wastewater through the sewage treatment plant	Enables treated wastewater reuse for suitable non-potable purposes and reduces freshwater demand

Evidence:

Water-Efficient Building Standards to Minimise Water Use:

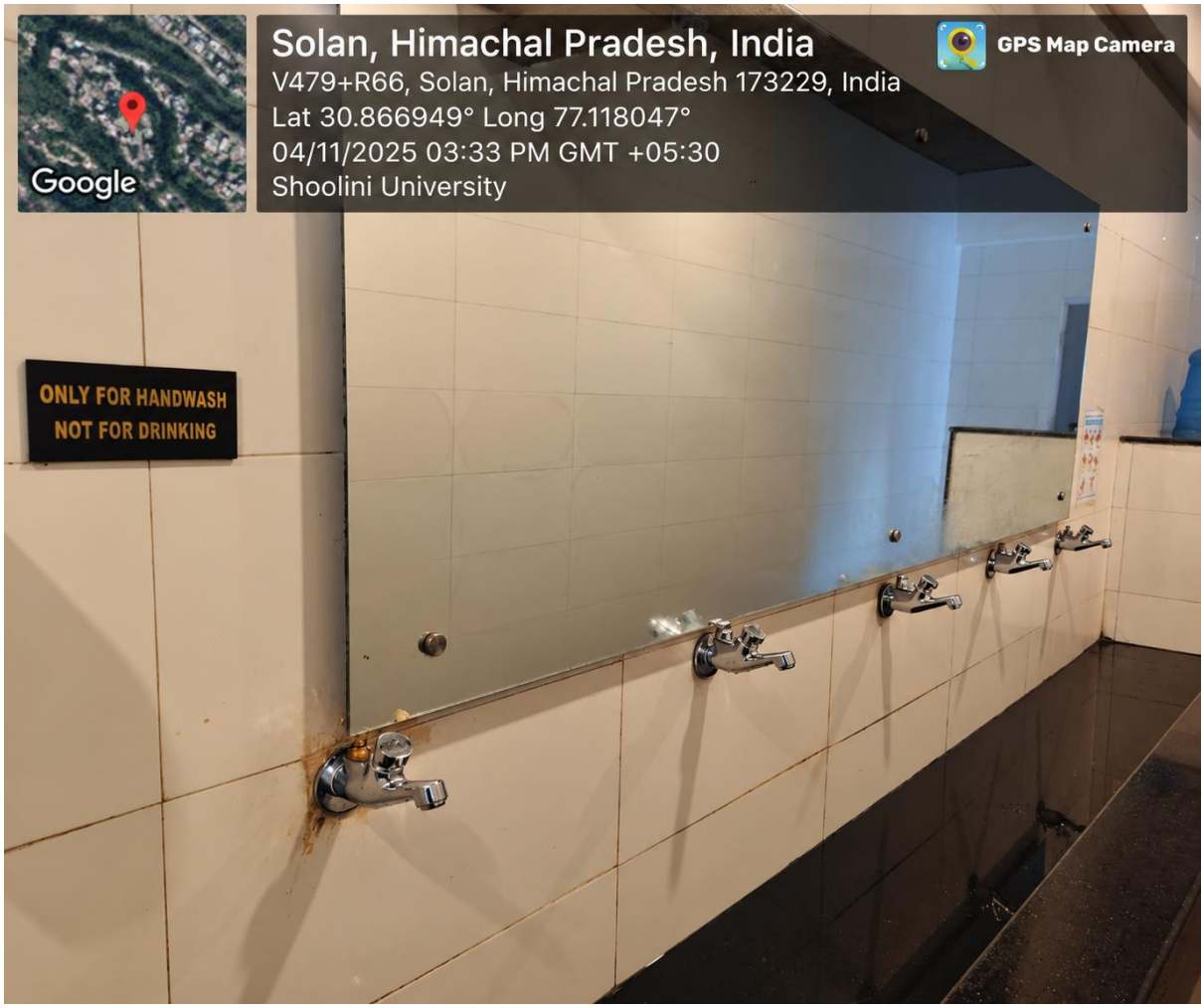
1. **Sensor-Based Faucets:** Installed in campus areas to automatically control and minimize unnecessary water flow.



Sensor-Based taps installed in A-Block

2. **Dual-flush toilet systems:** In campus washrooms as a water-efficient fixture, enabling users to select an appropriate flush volume and thereby reducing unnecessary water consumption and wastage.

3. **Low Flow taps:** Shoolini University has installed **609 low flow taps across the campus**. Reduces water consumption and minimises water wastage.



Low-flow taps installed in hostel mess for handwash

4. Sustainability in Design and Construction

The architectural design of our buildings reflects our commitment to sustainability. Each structure is meticulously planned to incorporate features that enhance energy efficiency and water conservation. For example, green roofs not only provide insulation but also facilitate rainwater collection, further reducing the demand for external water sources. Moreover, our campus layout promotes the use of permeable surfaces that allow rainwater to infiltrate the ground, reducing runoff and promoting groundwater recharge. This integrated approach to design ensures that every aspect of our campus contributes to our overarching goal of sustainability.

4.1 Rainwater harvesting

Shoolini University has adopted a range of innovative water management practices to ensure the sustainable use of this critical resource. The campus is equipped with a well-planned

rainwater harvesting system, which includes dedicated chambers for the collection and storage of rainwater from rooftops and open areas.

Harvested rainwater is used for irrigation, flushing and other non-potable purposes, while treated wastewater from the STP is reused for landscaping and other campus needs. To further reduce water consumption, University infrastructure incorporates water-efficient fixtures, permeable surfaces, rainwater recharge pits and efficient drainage systems, helping minimise water wastage and freshwater demand.



Roof-top rainwater harvesting system with downpipe in pharmacy block



Rooftop rainwater collection and conveyance system to dedicated chambers



Rooftop rainwater collection at A Block

5. Harvested rainwater supporting Construction Activities

Harvested rainwater is used to support construction activities across the University campus, reducing reliance on conventional freshwater sources. Integrating rainwater harvesting into construction projects promotes efficient water use, resource conservation and sustainable campus development. Each building project incorporates appropriate water-management systems, helping minimise freshwater consumption and strengthen the University's commitment to sustainable construction practices.

5.1 Groundwater Recharge and Surface Runoff Management

Shoolini University has implemented measures for groundwater recharge and surface runoff management, particularly considering the challenges associated with heavy rainfall in hilly terrain. A rainwater harvesting pond collects and stores excess rainwater during the monsoon season, which is subsequently used for irrigation, landscaping and other non-potable purposes.

These measures help reduce surface runoff, support groundwater recharge and minimise dependence on external water sources. This integrated system not only ensures the sustainable use of rainwater but also helps in reducing surface runoff, safeguarding campus infrastructure, and protecting nearby water bodies from erosion and contamination.



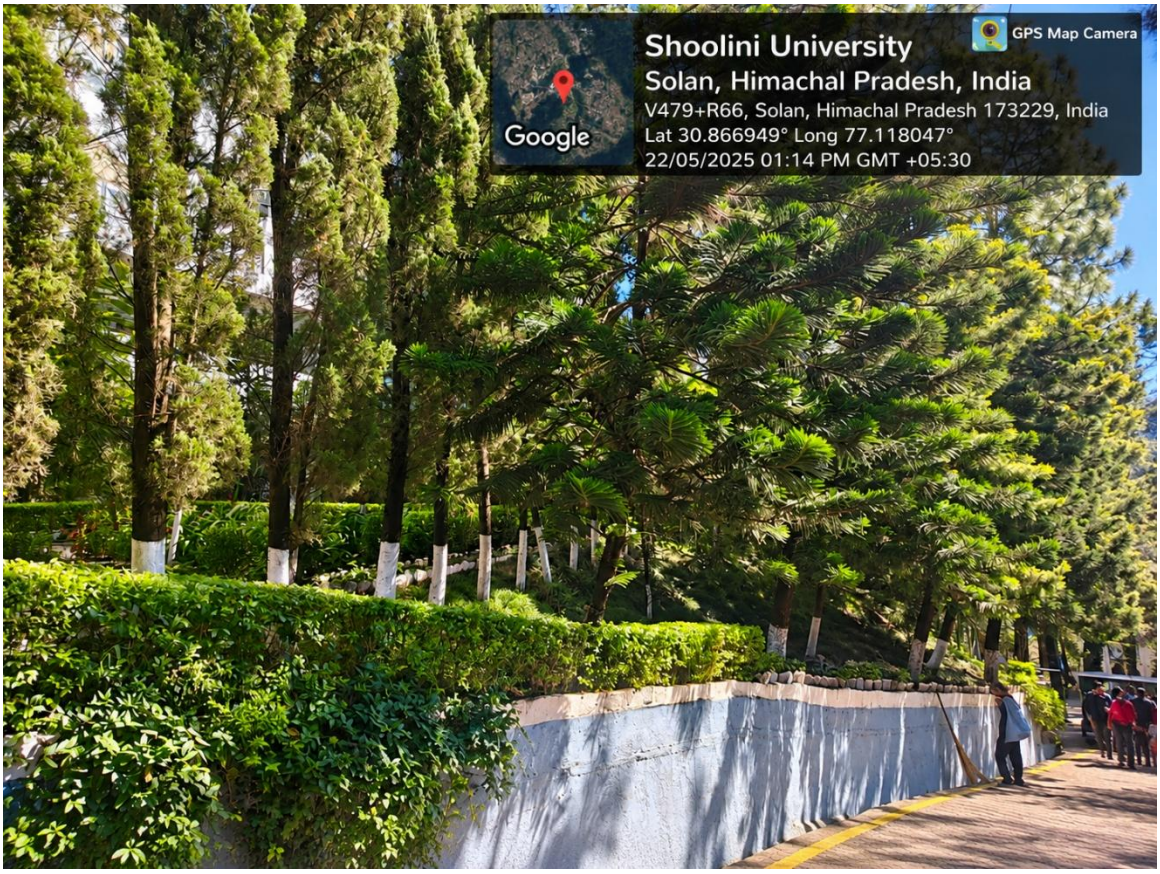
Water tank installed near the plant nursery to support plant irrigation



Groundwater Recharge and Surface water Run-off near Yogananda villa

6. Water-Efficient Landscaping

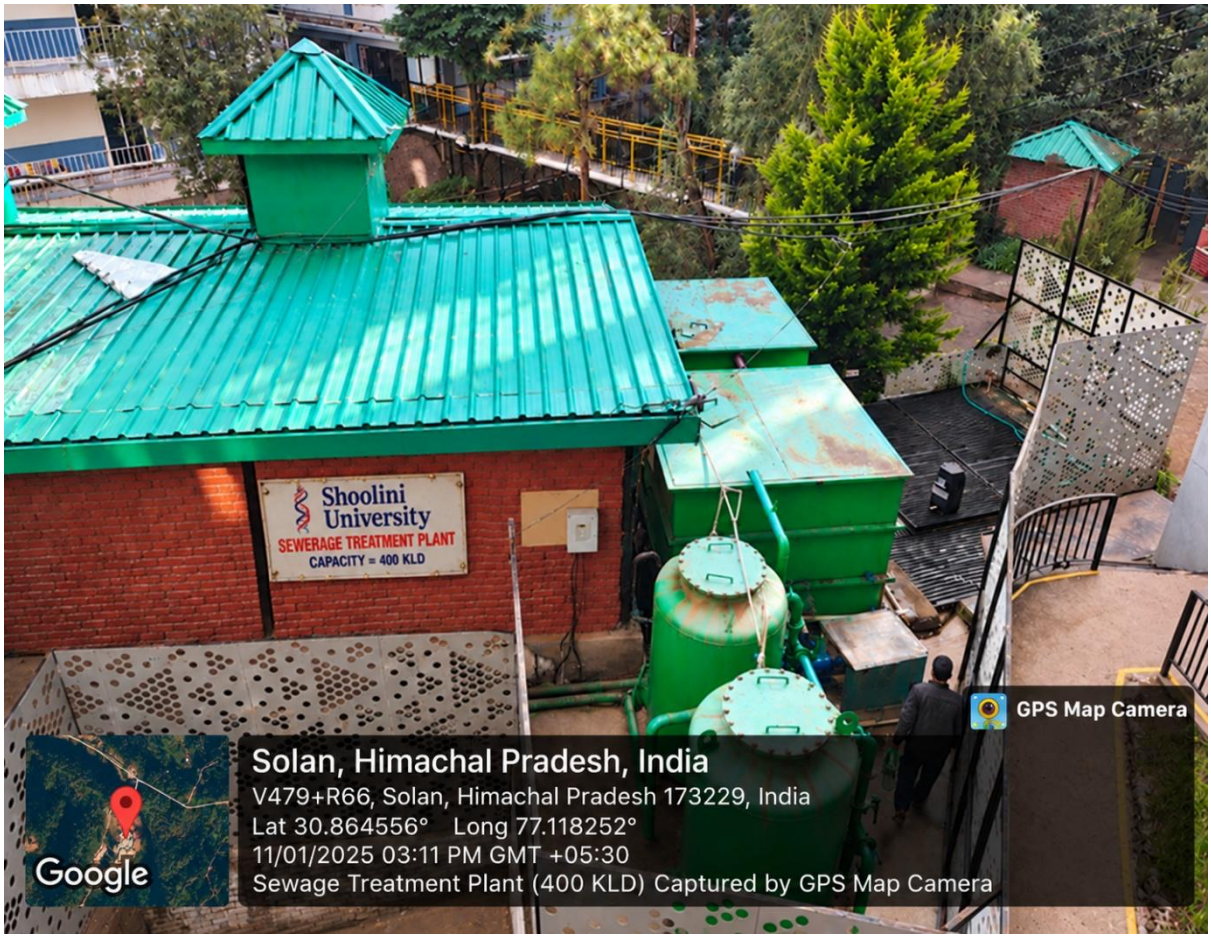
Shoolini University continued to strengthen its commitment to water-conscious landscaping and ecological sustainability through systematic plantation and expansion of campus green cover. During 2025, a total of 1,284 saplings representing 22 recorded species were planted across the University campus. The plantation included species such as Araucaria, Bottle Brush, Drake, Eugenia, Gooseberry, Golden Bottle Brush, Jamun, Jacaranda, Kachnar, Koelreuteria, Lagerstroemia, Nerium, Paltoform, Pencil Juniper, Punica, Putranjiva, Populur, Silver Oak, Tuni, Thuja, Weeping Willow, and Wild Cherry.



Landscape area outside the A block at campus

7. Wastewater treatment and reuse

Shoolini University has strengthened its commitment to responsible wastewater management and environmental sustainability through its upgraded Sewage Treatment Plant (STP). The University is dedicated to the effective treatment of wastewater and the maximum reuse of treated water for suitable non-potable purposes, thereby promoting water conservation and resource efficiency.



Sewage Treatment Plant having 400 KLD capacity

Future Goals

Shoolini University aims to strengthen its water-conscious building standards by expanding the use of water-efficient fixtures, rainwater harvesting, groundwater recharge, and treated wastewater reuse across campus infrastructure. The University will focus on improving water-consumption monitoring, assessing the effectiveness of existing conservation measures, and promoting water-efficient landscaping. Future priorities include documenting measurable reductions in freshwater demand, maintaining treatment-system performance records, and integrating water conservation into new construction and infrastructure upgrades. These efforts will support the University's continued contribution to SDG 6: Clean Water and Sanitation through resource efficiency and sustainable campus development.

Conclusion

Shoolini University has established a range of water-conscious building and campus-management measures, including sensor-based taps, dual-flush toilets, 609 low-flow taps, rainwater harvesting, groundwater recharge, and wastewater treatment and reuse. The University's 400 KLD Sewage Treatment Plant and the plantation of 1,284 saplings

representing 22 species in 2025 further demonstrate its commitment to water conservation and ecological sustainability. Continued monitoring, evidence-based evaluation, and systematic documentation of water savings will be essential to assess the effectiveness of these initiatives. Collectively, these measures provide a foundation for advancing sustainable water management and supporting SDG 6.