Shoolini University

SUSTAINABLE WATER EXTRACTION ON CAMPUS 2025



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6.5.4 Sustainable water extraction on campus

Shoolini University follows an integrated approach to sustainable water extraction on campus by combining multiple water sources, rainwater harvesting, wastewater recycling, and water-efficient infrastructure. The University uses groundwater from borewells, water supplied through the IPH/municipal network, and natural sources. Rainwater harvesting and groundwater-recharge measures further support responsible management of available water resources.

The University also recycles treated wastewater through its Sewage Treatment Plant (STP). Recycled water is utilised for **horticulture, landscaping, flushing, and other non-potable applications**, thereby reducing the requirement for fresh water. Water-efficient practices, including drip irrigation, support efficient distribution and help minimise water losses. The University's building and campus infrastructure also incorporate measures such as rainwater harvesting, permeable surfaces and groundwater-recharge facilities to support water conservation.

Sources of Water:

The principal sources contributing to the University's water supply during 2025 included:

- **Groundwater:** Water extracted through borewells.
- **Municipal/IPH supply:** Water received through the institutional/municipal distribution network.
- **Natural sources:** Water obtained from natural sources, including springs and related campus sources.
- **Rainwater harvesting:** Harvested rainwater supporting irrigation, landscaping and other non-potable requirements.
- **Recycled wastewater:** Treated wastewater from the STP reused for horticulture, flushing, landscaping and other suitable non-potable applications.

Water Consumption and Recycling – 2025

The University's monthly water records demonstrate systematic monitoring of **water received, water consumption and recycled water**. The data show substantial reuse of treated

wastewater throughout the year, with recycled water generally accounting for approximately **70–80% of recorded water consumption** on a monthly basis.

For example, in **March 2025**, the University recorded **105.51 lakh litres of water received and consumed**, while approximately **80.68 lakh litres were recycled**. Similar recycling levels were maintained across the remaining months, demonstrating the continued use of treated wastewater for non-potable requirements.

WATER RECEIVED		WATER USED	
MONTH	**TOTAL WATER RECEIVED**	**WATER CONSUMPTION**	**RECYCLED WATER**
Jan-25	4832590	4768940	3810852
Feb-25	8730340	8730340	6727046
Mar-25	10550850	10550850	8067826
Apr-25	9201060	9201060	6931872
May-25	8709520	8709520	6652568
Jun-25	3735660	3780570	2990496
Jul-25	5076390	5073720	4053296
Aug-25	10167440	10153940	6565755
Sep-25	9864360	9733150	6317588
Oct-25	11474790	11449330	8263673
Nov-25	12441100	12407870	8777852.5
Dec-25	9901340	9746860	6722370
Total	**104685440**	**104306150**	**75881194**

Sustainable Extraction Practices

1. **Rainwater Harvesting**: Rooftop structures and dedicated collection systems capture rainwater, which is stored in high-capacity tanks for irrigation and construction purposes.



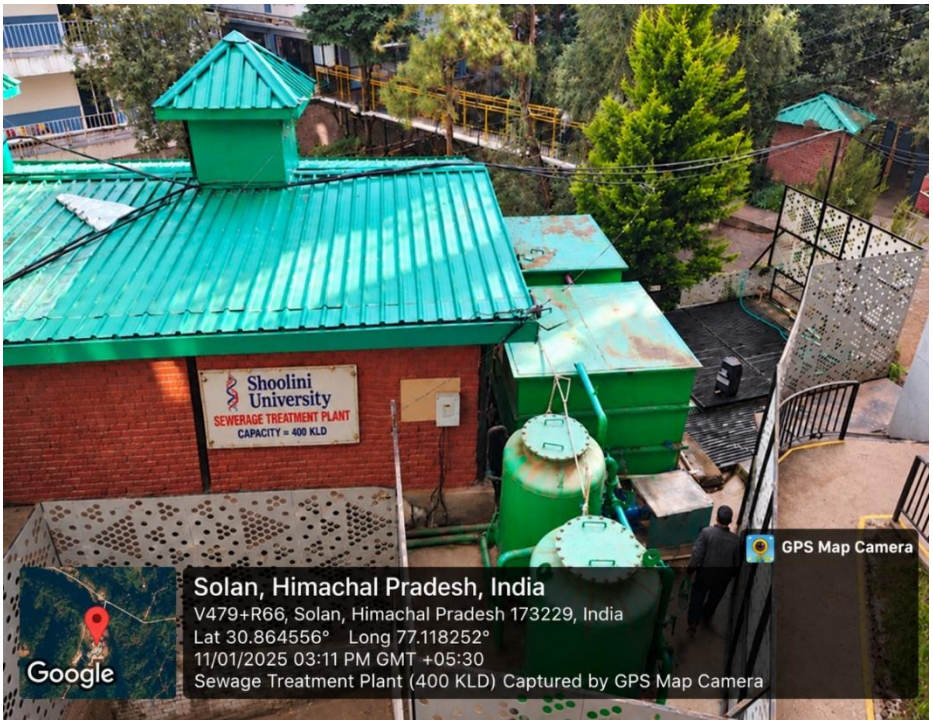
Rooftop building structures

2. **Groundwater Recharge**: Borewell extraction is balanced with recharge pits and permeable campus surfaces, allowing rainwater to replenish aquifers naturally.



Recharge pits near Yogananda Villa

3. **Sewage Treatment Plants (STPs)**: Recycled water from STPs is extensively reused across the campus, reducing the load on fresh water sources.



Sewage Treatment Plant having 400 KLD capacity

4. **Water Bowsers as Backup**: During periods of shortfall, bowsers ensure continuity of supply without over-exploiting local natural sources.
5. **Monitoring and Technology Integration**: Smart meters and monitoring systems track consumption and recycling, enabling data-driven decision-making for sustainable use.

The University achieved comprehensive *integration of sustainable water extraction practices*, which include the regulated withdrawal of groundwater, recharge of aquifers through percolation and rainwater harvesting wells, and the reuse of treated wastewater for landscaping, horticulture, and other non-potable applications. These measures ensure that water resources are managed responsibly, extraction remains within sustainable limits, and the overall ecological balance of the campus is maintained.

Centre for Science Learning and Creativity (CSLC) Science Museum, Shoghi, Shimla
Workshop Highlight: Water Conservation and Rainwater Harvesting

The CSLC Science Museum hosted a week-long workshop on Water Conservation and Rainwater Harvesting, jointly organised by EIACP and HIMCOSTE. Throughout the week, participants engaged in informative sessions and practical activities focusing on water conservation, rainwater harvesting techniques, and their role in addressing water-related challenges amid changing climatic conditions. The workshop strengthened awareness of sustainable water management and encouraged participants to connect scientific knowledge with practical conservation measures.

The initiative highlighted the importance of responsible water stewardship and collective action in protecting water resources, supporting SDG 6: Clean Water and Sanitation.



Group photographs of workshop held in CSLC Science Museum

Conclusion

Shoolini University demonstrates its commitment to sustainable water extraction and responsible water management through the integration of multiple water sources, rainwater harvesting, groundwater recharge, and wastewater recycling. During 2025, the University recorded **total water consumption of 104,306,150 litres and recycled 75,881,194 litres** of water, equivalent to approximately 72.75% of the recorded consumption. The 400 KLD Sewage Treatment Plant, recharge infrastructure, and water-efficient practices support the conservation of freshwater resources and the reuse of treated wastewater for non-potable applications. In addition, awareness initiatives, including the water conservation and rainwater harvesting workshop organised by EIACP and HIMCOSTE at the CSLC Science Museum, promoted responsible water stewardship. These measures contribute to SDG 6: Clean Water and Sanitation, while continued monitoring, data validation, and assessment of groundwater extraction and recharge are important to strengthen long-term water sustainability.