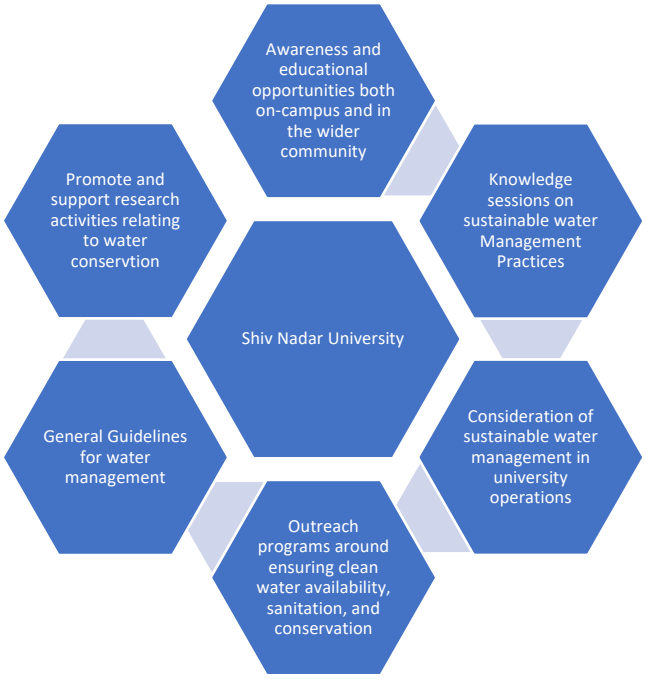
# Shiv Nadar University Water Management and Reuse System

SNU undertakes to contribute to the cause of water conservation and ensure the availability of clean water through a variety of programs including:

1. Awareness and educational opportunities both on-campus and in the wider community
2. Knowledge sessions on Sustainable Water Management Practices
3. Consideration of sustainable water management in university operations
4. Outreach programs around ensuring clean water availability, sanitation, and conservation
5. General Guidelines for water management
6. Promote and support Research activities relating to water conservation




# Awareness and Educational Opportunities

Shiv Nadar University is committed to increasing awareness of sustainable water management practices. We, as a university, urge our faculty, staff, and students to be aware and also reiterate their knowledge of good water management practices and sustainability.

Current opportunities provided by our universities are:

## A. Courses

1. UG Environmental Science course which is mandatory for all students across the campus.
2. Semester courses and optional courses talking about sustainable water management in various areas like agriculture, engineering processes, etc are available.
3. Certificate courses in water management
4. MSc in Water Science and Policy program

## B. Awareness program

Several awareness programs are held for students, faculty, staff, third-party staff and the wider community around water conservation and preservation of natural resources.

1. Conferences are held around this area in different schools by the university as a body
2. Faculty development programs

3. Staff sensitization
4. Local community educational training
5. Talks and community sensitization programs

## C. Awareness initiatives

1. Signages is present all over the campus to increase awareness about good water management practices


2. Signage is displayed near the natural and the artificial lake maintained at the university campus restricting any kind of act which might contaminate the water bodies maintained. Strict vigil is also maintained by the deployed security team to ensure no one pollutes the water bodies by throwing any garbage or enters the water body or disposes any kind of chemical in these lakes.


3. Water-efficientent agriculture practices are also encouraged. The community is engaged and made aware of the benefits of Drip irrigation to be used for the cultivation of crops including

Grains. Actual proof of the concept is also presented to the community by the faculty who undertook an initiative along with a global partner to grow grains using the drip irrigation process at the campus.

4. Awareness programs on the importance of Hygiene and Sanitation are also undertaken to sensitize the community and students
5. Clean drinking water is made available 24/7 on the campus through multiple dispensing stations for drinking and for cleaning purposes to ensure adequate hygiene and sanitation conditions are maintained across the campus.

# Sustainable water management Practices

## Water use and reuse system

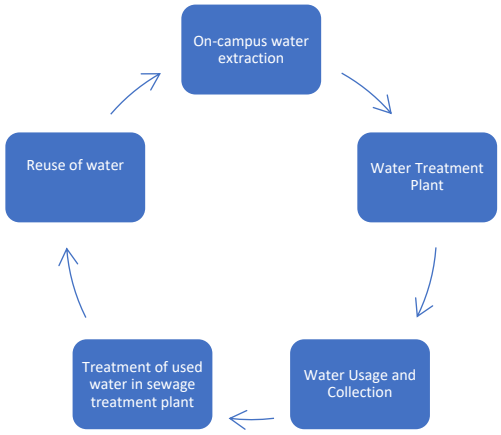



*Figure 1Process Overview*

Process:

1. Water extraction
    - On-campus water extraction is done from borewells. Compliance is ensured with the daily extraction limit provided by Central Ground Water Authority (CGWA)
    - In addition to the ground water, water is also collected through the Rainwater harvesting infrastructure installed on campus. Rain water is collected using the installed infrastructure of the university building for usage.
    - Chemical testing and analysis of the water is done to ensure that all relevant parameters are within the limit and the water is safe for the intended purpose.
2. Water Treatment Plant
    - A part of the treated water is directly supplied for domestic use in washrooms and for the cleaning activities
    - Another portion of the treated water is supplied to be further filtered and used for drinking purpose
    - Chemical testing and analysis are done to ensure that all relevant parameters are within the acceptable limits.

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*Figure 2 Water treatment plant*

3. Water usage and collection
    - Signages are placed across the campus promoting conscious water usage
    - Water consumption is monitored and analysed for usage trend and identification of opportunities for further improvement.
4. Treatment of used water in the sewage treatment plant
    - Water being treated is measured and records maintained.
    - Documentation of water usage and reuse is done for carbon footprint computation in Carbon Foot Print Data Sheet.
    - 
      
      

*Figure 3 Shiv Nadar University Sewage Treatment Plant*

5. Reuse of water

- Water is currently being reused for horticulture purposes through tanks and pipes for irrigation
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*Figure 4 Gardening water supply pumps for reuse of treated water*

- Measurement of reused water is done by recording the number of tanks sent for horticulture purposes and the amount of water being sent through pipes.

| | | | |
|---|---|---|---|
| Water | Water from Bore well | 233179 kl | |
| | Water from Municipal Water Supply | 0 | |
| | Water purchased from Tanker suppliers | 0 | |
| | Bottled water purchased | 3050 Ltr | Academic and Non Academic= 5500 Botlle of 250 Ml<br>Cafeteria= 4040 Bottle of 250 Ml<br>2385000Ml<br>2385 Ltr<br><br>Clubhouse= 359Ltr<br>VH=306 Ltr |
| | Waste Water Treated | 109899000 Ltr | |
| | Treated waste water consumption | 109899000 Ltr | |

*Figure 5 Section of Carbon Foot print data sheet talking about water use and reuse measurement*

## Prevention of pollution of water systems

1. Considering the importance of maintaining the quality and safety of the water, processes and controls are deployed to ensure prevention of the water leakage from the pipelines.
2. All the water pipes are placed in separate Concrete Trenches which do not allow infiltration of water from any other source to avoid any contamination by any other source of water
3. The water pipelines are sealed and are reviewed at periodic intervals to identify any possible leakage or change of any cross contamination
4. Pressure differential gauges are installed to detect any possible leakage and Regular preventive maintenance is undertaken to prevent any leakage into the ground or contamination of the water system present on campus.
5. Throwing of garbage or any contaminating material on the ground or lake is strictly prohibited in the university and monitoring is done near the lake system through guards and the CCTV surveillance to ensure compliance with the same. In addition, signages are present on campus to prevent contamination of ground or water systems on the campus.

## PLANNING AND DEVELOPMENT PROCESSES

1. Water efficiency renovations, building designs, and upgradation

1.1 Infrastructure

1.1.1 All washrooms are equipped with press-Matic taps that regulate water flow to prevent the wastage of water.

1.1.2 Rainwater harvesting system is installed campus-wide in all the buildings. Stormwater drainage systems are present near pavements and rainwater harvesting systems are present in buildings as well, then the water is filtered and released into an artificial lake and a natural lake.


*Figure 6 Stormwater drainage and catchment*

*Figure 7 Rooftop rainwater harvesting*

1.1.3 The university is IGBC LEED certified with processes to conserve water and increase water efficiency in place. One of the key areas of IGBC green homes is water efficiency. In addition, the upgradation of the building is planned with an increase in measures and upgrades centered around environmental protection including water efficiency measures.


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INDIAN GREEN BUILDING COUNCIL
indian green building council
Faculty Housing, Villas and Club House
Shiv Nadar University, Dadri, Gautam Buddha Nagar, Uttar Pradesh
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Indian Green Building Council (IGBC)
hereby certifies that
FACULTY HOUSING,VILLAS AND CLUB HOUSE
Shiv Nadar University, Dadri
(IGBC Registration No. GH161098)
has successfully achieved the Green Building Standards required for the following level of certification under the
IGBC Green Homes Rating System
Gold
March 2020
This certification is valid for 3 years.
Sharukh Mistry
Chair, IGBC Green Homes
V Suresh
Chairman, IGBC
S Raghupathy
Deputy Director General, CII
K S Venkatagiri
Executive Director, CII-Godrej GBC


CII
Confederation of Indian Industry
Indian Green Building Council (IGBC)
hereby certifies that
Shiv Nadar University
Indoor Sports Centre, Dadri
(IGBC Registration No: NBO 15 0496)
has successfully achieved the Green Building Standards required for the following level of certification under the IGBC Green New Buildings Rating System
IGBC Green New Buildings Rating System Gold
Owner-occupied Building
June 2017
C N Raghavendran
Chairman, IGBC Green New Buildings
Dr Prem C Jain
Chairman, IGBC
K S Venkatagiri
Executive Director, CII-Godrej GBC


CII
Confederation of Indian Industry
Indian Green Building Council (IGBC)
hereby certifies that
Shiv Nadar University-Library
Dadri, Distt.: Gautam Budha Nagar, UP 201301
(IGBC Registration No: NC 09 1133)
has successfully achieved the Green Building Standards required for the following level of certification under the Leadership in Energy and Environment Design (IGBC's LEED) for India Green Building Rating System
IGBC's LEED India New Construction Gold
December 2016
C N Raghavendran
Chairman, LEED India
Dr Prem C Jain
Chairman, IGBC
K S Venkatagiri
Executive Director, CII-Godrej GBC


CII
Confederation of Indian Industry
Indian Green Building Council (IGBC)
hereby certifies that
Shiv Nadar University-Research Block
Dadri, Distt.: Gautam Budha Nagar, UP 201301
(IGBC Registration No: NC 09 1133)
has successfully achieved the Green Building Standards required for the following level of certification under the Leadership in Energy and Environment Design (IGBC's LEED) for India Green Building Rating System
IGBC's LEED India New Construction Gold
December 2016
C N Raghavendran
Chairman, LEED India
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Executive Director, CII-Godrej GBC





1.1.4 Water-saving process during development:

1.1.4.1 During the construction process, **it is ensured that only a minimum amount of water is used.**

1.1.4.2 Hessian Cloth/Gunny Bag Usage For Water Curing which helps in reduction in usage of potable water.

*Figure 8 Gunny bags are used to reduce water usage*

1.1.5 Water Conscious planting

We are committed to the conservation of water by plantation of drought-tolerant plants on the campus. As a result, irrigation requirements are reduced and at the same time, a green campus is also ensured.

Some of our drought-tolerant species planted across the campus are Acacia auriculiformis A.Cunn. ex Benth., Albizia lebbeck (L.) Benth., Casuarina equisetifolia L., etc.

SNU has wonderfully rich biodiversity. We monitor and conserve our biodiversity and ensure the protection of the same. There is a biodiversity park in place and several research activities and events are done revolving around the conservation, promotion, and recording of biodiversity.

1.2 Maintenance

1.2.1 All washrooms and taps are maintained regularly to prevent water wastage.

1.2.2 QR Codes are present in hostel and washroom facilities for students and staff to scan the codes and mention their complaints or report any issue in the washrooms.

1.2.3 Housekeeping: All staff responsible for cleaning are trained to use only the necessary amount of water for cleaning or maintenance purposes.