

May 16, 2022

Water Conservation Policy (Revised) of DIT UNIVERSITY

PREAMBLE

The water policy of DIT University aims to follow the collection, distribution, utilization, re usage and conservation of water in a sustainable way in line with objective of the University to establish a sustainable Campus in line with the famous saying of "Every Drop Counts". The policy ensures most effective ways to ensure avoidance and no wastage and optimum utilization of water with appropriate infrastructure planning and execution at ground level with cooperation of all the stakeholders of University.

OBJECTIVE

DIT University has strong water policy that ensures pollution free clean water for all stakeholders of University and use of same in most sensible and sustainable ways with the inclusion of water conservation principles.

1. WATER COLLECTION

University receives water from following sources:

1. Tube well (900 cubic metre per day)
2. Uttarakhand's Jal Sansthan (4 water supply lines, which provide total 250 cubic metre per day).

Tube well water source near University is taken from artesian well which do not require any pumping to be done extra to extract from groundwater. Hence there is no additional pressure on existing groundwater table in process of extraction. Only, the accumulated water is pumped to water storage.

Uttarakhand Jal Sansthan further extract water from nearby river resources which are precipitation fed small tributaries, natural springs and tube wells as per the Government policy.

2. WATER STORAGE

University has water storage capacity of total 700 cum which is constantly being used and filled up whenever required. The storage is fitted with prevention of water overflow to stop water wastage.

3. WATER DISTRIBUTION SYSTEM

University is having layout of water supply lines scientifically designed with corrosion free and durable materials that maximize leak proof water supply and prevent contamination from outside sources. Both water supply and sewer lines are running

Established vide Uttarakhand Act No. 10 of 2013
Recognized by UGC under Section 2 (f) of the UGC Act, 1956



apart having reasonable six feet distance longitudinally & vertically. Periodical maintenances are conducted for both the lines to prevent any mechanical failure and leakage in pipelines. University also takes care of any further water accumulation near the lines during precipitation to stop contamination.

4. WATER TREATMENT FACILITIES

University has advanced water treatment facility consisting of three types of filters for which is combined with storage facility to provide additional treated water after water collection from sources: Multi Graded Filter (MGF), Activated Carbon Filters (ACF), Water Softener.

MGF is used to remove suspended solids, dust and dirt present in the water. ACFs are used in the process of removing organic compounds. Water softener is deployed for keeping water hardness within permissible limit.

5. WATER USAGE

Per day water consumption is 600 cubic metre with full capacity of 6000 Students that include 2000 hostlers and 4000 day scholars, 600 number staff and 100 number of visitors.

6. WATER DISTRIBUTION POLICY

DIT University believes everyone is having fundamental right to get potable water without any conditions and constraints in society. Therefore, University shares and distributes its water resources free for all its stakeholders and outside guests. There is no financial charge attributed on anyone for water usage. However, University promotes and encourages all for sustainable use of this resources.

7. STRATEGY OF BUILDING TO MINIMIZE THE WATER USAGE

DIT University buildings are fitted with pressmatic water dispensing taps and flushing cisterns with minimum time setting to reduce water wastage. Same is also done in laboratories where sink is used.

8. WASTE WATER MANAGEMENT FACILITY

University has sewage treatment plant (STP) facility of capacity 500 cubic metre per day capacity to handle waste water of the University. In addition to this, another unit of 265 cubic metre per day capacity is kept on standby in case of emergency of maintenance of the primary unit or non-functioning. STP process and test results are well maintained in log book. The quality of water is periodically tested in Government approved laboratories and submitted to concerned offices.

9. WATER REUSE

DIT University complies with zero discharge policy of the Central and State Pollution Control Board. No water is discharged to the surrounding environment. All the used water is treated in STP and reused for Horticulture & Flushing of Toilets.



10. WATER CONSERVATION FACILITIES

University has water harvesting plant where rain water of 1200 m² area is collected & discharged to ground water after passing through six stage cleaning /filtration process. The complete process is defined at site also documented. Average rain fall is approx. 1500mm (Annual), total area is 1200 m² for water harvesting pit, approx.1100 cubic metre water every year.

11. UNIVERSITY AIMS AND INITIATIVES

11.1 Responsibilities of Stakeholders

- Proactively support of all stakeholder in execution of water sustainability measures by University
- Self-motivation among all to stop water wastage wherever the same is found.
- Judicious use of water for drinking and other purposes
- Proactively reporting and taking measures if there any leakage or mechanical failure in water supply lines.
- Enthusiastic participation in all water conservation related activities hosted by University on and off campus.
- Commitment towards green campus policy and environmental management
- Involvement in community program for awareness campaign outside University campus

11.2 MONITORING, MAINTENANCE AND RECORDS

- Monitor water supply records periodically with log book
- Maintenance record of water supply systems, storage and leakage
- Replacement of faulty pipelines, joints, taps, closets, Pipe appurtenances
- Use of cost effective, durable, environmental friendly materials in water and water pipelines and appurtenances
- Updation and planning of pipe network as per the requirements of new buildings to be constructed and its floor plans in the campus.
- Periodical efficiency measurement of water pipe appurtenances
- Planning of integrated water management system in campus

11.3 WATER AUDIT AND COMPLIANCE OF RECOMMENDATIONS

- Updated documentation on water volume extraction, storage, distribution, reuse.
- Updated record of reports of maintenance need and subsequent actions taken
- Periodical internal and external audit.
- Analysis of the audit report in statutory bodies and further recommendation plan
- Vision and planning of achieving water efficient building standards



11.4 EDUCATION, RESEARCH AND OUTREACH PROGRAMS TO PROMOTE WATER SUSTAINABILITY

- Integration of courses and programs related to environmental sustainability, water quality management, waste water treatment, rainwater harvesting
- Ensuring minimum courses to be opted by university students as core mandatory courses and increase the limit for option for free courses.
- Arranging joint collaborative workshops or conferences on environmental sustainability. Enhance the collaborative research on same with national and international agencies.
- Involvement in national and international missions to promote sustainability through panel discussions, debates, joint statements, publications
- Appropriate signages and posters on campus to promote awareness on water saving, water conservations.



Kuhag

Registrar

WATER AUDIT

Conserve
WATER



DIT UNIVERSITY DEHRADUN

VILLAGE MAKKAWALA, MUSSOORIE DIVERSION ROAD, DEHRADUN (U.K.)

CONDUCTED BY:



A-Z ENERGY ENGINEERS PVT. LTD.

PLOT NO. 12, 4860-62, HARBANS SINGH STREET, KOTHI NO. 24,

WARD NO. II, DARYA GANJ, NEW DELHI-11002

☎ 011-23240541, 9811402040 📧 pp_mittal@yahoo.com



Contents

| | |
|---|----|
| Introduction of Audit Team | 3 |
| Executive Summary | 4 |
| Brief about DIT University | 5 |
| Methodology | 7 |
| Points of Appreciation | 8 |
| Activities of University on water use | 9 |
| General Observations and Recommendations | 11 |
| Environment and Green Policy with Water Use as Constituent | 12 |
| Water Use in University & Sources of Water | 14 |
| Details of Occupancy | 15 |
| Annual Water consumption benchmark as per NBC-2016 | 16 |
| Share of Annual consumption-NBC-2016 | 17 |
| Share of Water Consumption as per NBC-2016-Norms | 18 |
| Estimated Annual Consumption | 19 |
| Total Turf Area | 20 |
| STP & Water Test Reports | 21 |
| Program on Water use | 23 |
| Water Use Study - Flow Rate | 25 |
| Inventory of Toilet | 27 |
| Observations on Water Use | 29 |
| Rain Water Harvesting System | 30 |
| Sustainable Development Goals | 31 |
| Summarization of Water Audit Findings | 32 |
| Annexure-A- Photographs related to use of water | 34 |
| Annexure-B-Sample recording of STP operational parameters | 40 |
| Annexure-C Water Requirement for Building | 41 |

Introduction of Audit Team

We at A-Z Energy Engineers Pvt. Ltd are grateful to the management of DIT University for awarding the work of Water audit. We are especially thankful to top management. We also express our sincere gratitude to Mr. Alok Saxena and other members of team for their proactive approach and providing us well maintained relevant data required for audit. We are also thankful to the other concerned in charge of various departments for their cooperation during audit study at site and also the members of staff for their active involvement in audit on site study.

The following members of A-Z Energy Engineers Pvt. Ltd. were part of audit study at DIT University.

1. Dr. P.P.Mittal –Principal Auditor
2. Mr. Satvinder Singh-Associate Auditor
3. Mr. Ranjit Singh -Data surveyor cum senior instrument technician
4. Mr. Ashwani-Instrument technician

Executive Summary

Water is a precious and scarce resource on planet and especially the scarcity of water in India is predominant because of its requirement of water for direct consumption and also higher consumption of resources that also further require water for all processes. Water is required for electrical generation as well as Air conditioning also. Water is a main aspect of Environment. Water audit is a snapshot in time, in which one assesses campus performance in complying with applicable water use benchmarks, maintaining required quality of drinking water, optimising water use thereby mitigating impact of its activities on the climate change. Though a helpful benchmark, the water audit almost immediately becomes outdated unless there is some mechanism in place to continue the effort of monitoring water use for the activities of university. This audit report contains observations and recommendations for improvement of consciousness towards water use reduction, water wastage avoidance and recycle and reuse of water.

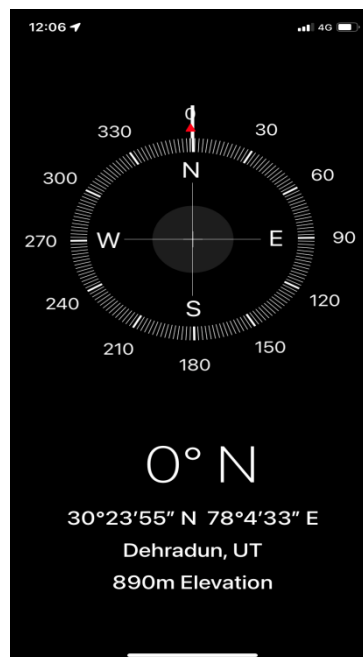
A nation's growth starts from its educational institutions, where the ecology of which water is the main constituent along with waste and air is thought as a prime factor of development associated with environment. Educational institutions now a day are becoming more sensitive to environmental factors and more concepts are being introduced to make them eco-friendly. Awareness and sensitization of students on water use and water conservation will go a long way for the benefit of planet.

With pro-active approach of management and staff for improvement of environment and reduction of impact of university activities including water use on climate, there is always an inclination of all related stake holders that is teaching, non-teaching staff and other support staff the university is continually functioning for conservation of water in university and sensitization around university premises and mitigation of impact of its activities on climate by optimization of water use.

To conserve the water within the campus, various viewpoints are applied by all the concerned stake holders. DIT university-Dehradun to solve their environmental problems through inclusion of water during formulation of Environment and green policy.

Brief about DIT University

The DIT University is located at village, Makkawala, Mussorie Diversion Road, Dehradun. The coordinates of DIT University are latitude 30 degrees 23' And 55 "North Longitude 78 degree 4' 33" East at an altitude of 280 meters above mean sea level. It is located at 890 meters altitude above sea level.



As per NBC-2016 and ECBC-2017, climate of Dehradun is in composite which means that climate of Dehradun has high number of heating degree days and also higher number of cooling degree days, thus impacting its water use during summer.

The university campus has the following facilities

Schools

- School of Computing
- School of Architecture, Planning & Design
- School of Pharmaceutical & Populations Health Informatics
- School of Physical Sciences
- School of Liberal Arts & Management
- Department of Management Studies
- Department of Humanities & Liberal Arts

- School of Engineering & Technology
- Department of Civil Engineering
- Department of Electrical and Electronics & Communication Engineering
- Department of Mechanical Engineering
- Department of Petroleum & Energy Studies

Central Facilities and Labs in University Premises

- Veda - The Central Library
- Computing Facilities
- NPTEL
- Central Workshop

LABS

- Architecture
- Civil Engineering
- Mechanical Engineering
- Petroleum & Energy Studies
- Pharmacy
- Humanities
- Physical Sciences
- Electrical and Electronics & Communication Engineering



Methodology

Pre -Audit meeting

A pre-audit meeting provided an opportunity to reinforce the scope and objectives of the audit and discussions were held on the practicalities associated with the audit. This meeting is an important prerequisite for the water audit because it is the first opportunity to meet the University concerned personnel for audit and deal with any concerns.

Management's Commitment

The Management of the university has shown the commitment towards the green auditing during the pre-audit meeting. They were ready to encourage all green activities. It was decided to promote all activities that are environment friendly such as awareness programs on the water conservation etc., after the green and water auditing.

Scope and Goals of Water Audit

A clean and healthy environment aids effective learning and provides a conducive learning environment. There are various efforts around the world to address environmental education issues of which water use is the main constituent. Water Audit is the most efficient and ecological way to manage environmental problems. It is a kind of professional care which is the responsibility of each individual who are the part of Economical, financial, social, environmental factor. It is necessary to conduct water audit in university campus because students become aware of the importance of water use and its management, its advantages to save the planet and they become responsible citizen of our country who will care for limited and scarce natural resources..

Points of Appreciation

1. The staff of DIT university are quite aware and proactive in approach towards water a major environmental aspects.
2. There is initiation in maintenance of data for water use.
3. There are two operational STP, s are installed and used for re-use of water and avoiding discharging black water directly into natural streams.
4. Reuse of water: The treated water from STP is used for Gardening and Flushing purpose depending on the quantity treated.
5. There is an environment policy in place that covers aspects of Water use also.
6. There are push type taps installed for reducing the water use and reduction of wastage.
7. Most of the places ablution taps are not installed and health faucet have been installed for avoiding the wastage of water.
8. The staff and students of university are taking active interest for improvement of environment through water management.
9. The university is regularly conducting department activities for creating awareness and sensitization of students, faculty members and other staff members. Few of these are in next chapter

Activities of University on water use

World Water day Celebration



REPORT
EVENT: WORLD WATER DAY
11-UK (3)Bn. NCC DITU

DATE: 22nd March 2022

TIME: 4 pm

VENUE: Chanakya seminar hall DIT University

NCC Cadets of DIT university conducted a event of world water day . It was an offline event and the Cadets participated in this event with full enthusiasm.

This event on world water day was organized to make people aware about the importance of ground water and how we can conserve the water. This event was conducted on 22nd of march 2022 from 4pm to 5pm at Chanakya seminar hall DIT University

It was an offline event. The cadets presented the Slogans , Speeches , poems and there personal views on how they can contribute in saving water. Vaishnavi Thapa and Bhavya Puri were the hosts of the event. She introduced us to the importance of the topic and why we celebrate it

The ANO Brijlata Chauhan shared her views about the importance of world water day and encouraged us to give our selfless contribution in saving water and thereby saving mother earth. She also motivated us for tree plantation

The world water day is celebrated since 1993 to mark the importance of groundwater in everyone's life .lastly the event ended with NCC song and with a great message





6. Event - World Water Day

Date: 22nd March 2021

Time: 3:30 pm

Venue: Online (google meet)

NCC Cadets of DIT university conducted a webinar on world water day it was an online event and the Cadets participated in this event with full enthusiasm.

With 'valuing water' as this years theme the webinar on world water day was organized to make people aware about the importance of water. This event was conducted on 22nd of March 2021 from 3:30pm to 4:30pm

It was an online event The cadets participated in different activities. Pallavi Mahra and Ishita Gupta were the hosts of the event. Shikhi Kaur and Aayushi Kaur prepared a speech. Kirti Verma, Ishita Gupta and Pallavi Mahra made some posters and a power point presentation.

The ANO Bhijlata Chaudhan shared her views about the importance of water along with some of the measures to save water and made everyone realize that world water day is an opportunity to learn more about water related issues, be inspired to tell others and take action to make a difference.

It is well said – "if you save water,

Water will save you".

World water day is meant to be a call to action. We must recognize the importance of water and take action to conserve this basic resource, the resource which gives our planet its unique colour.



11 UN Girls BN NCC DIT University, Dehradun, UK India

General Observations and Recommendations

- ❖ The Environment and Green policy be displayed at following prominent locations inside the premises.
 - a. Near main gate
 - b. At main entrance of Administrative Building
 - c. Cafeteria
 - d. Academic Blocks
 - e. Auditorium
 - f. Library
 - g. Hostels
- ❖ Signage for water conservation are required to be displayed in Cafeteria and also in hostels and all other toilets .These are also required to be displayed at main entrance and other prominent areas inside the campus..
- ❖ Single stack plumbing system is in place in all buildings except two buildings thereby increasing the avoidable load on STP and also increasing the electricity consumption for treatment of mixed water.
- ❖ Two stack plumbing system is recommended for future augmentation/major repairs for separation of Black and grey water for energy savings and not stressing the capacity of installed STP.
- ❖ Flow Meters be installed at the three incoming water lines immediately for measuring the water use.
- ❖ Flow Meters are also required to be installed at the following locations
 - a. Cafeteria
 - b. All hostels
 - c. All other buildings
 - d. Water used for horticulture

Environment and Green Policy with Water Use as Constituent

DIT UNIVERSITY, DEHRADUN ENVIRONMENTAL & GREEN POLICY

Policy Statement

DIT University, Dehradun, is dedicated to its estate management in accordance with the responsibilities to pressure out environment. These responsibilities shall be established within the following areas as under:

- 1. Environmental Rules and Guidelines:** DIT University commit to safeguard the compliance to extant pollution control and other appropriate environmental guidelines. Tree Plantation Policy is in place to ensure that adequate green cover is maintained in and around the campus.
- 2. Waste Disposal and Recycling:** DIT University will pursue to minimize its generation of waste without compromising its primary functions, or by re-use of materials within or outside the university premises. The materials shall be recycled wherever the reduction or re-use is not feasible. The Waste Management prices shall be strictly of the University adhered to.
- 3. Energy:** DIT University is ecologically accountable for its use of energy, and will therefore consider the sources, type, origin and destination of energy input and output throughout the premises. This will require careful nursing of alternate energy sources, removal of unnecessary or redundant used system, and a continuing program of energy preservation. There are already renewable energy solar PV plants installed and in the near future, efforts shall be made to use renewable energy to the degree possible for mitigation of impact of energy used by university on the environment.
- 4. New Build and Building Refurbishment:** DIT University, Dehradun, will ensure that any new construction or refurbishment whenever planned shall be executed as per the guidelines prescribed by the National Building Code-2016 and the prescribed EIA guidelines.



A handwritten signature in blue ink, appearing to read 'Ramesh'.

5. **Water Use:** The University intends to promote optimization of water use by avoidance of wastage, treatment, recycling and re-use of waste water for other possible uses.
6. **Cleaning:** DIT University shall use such cleaning products that are suitable and prescribed by the concerned approving bodies and which prescribe to reducing the carbon foot print followed by cost and suitability. The University shall monitor and assess its working practices aligned towards controlling the doses so as to reduce the risk of over concentration and additional residue of unused cleaning mixtures which may find their way into piped waste disposal systems.
7. **Green Travel Plan:** DIT University, Dehradun actively encourages the use of public transport, walking and cycling. The University, wherever possible encourages students and staff to use public transport when on college assignments. This plan is regularly reviewed. The travel of students shall also be encouraged through public or shared transport.
8. **Tobacco Free premises:** The University administration pledges and carries out various initiatives to make the premises tobacco free completely. No smoking nor any type of tobacco products shall be allowed inside the campus.
9. **Food Policy:** DIT University, will ensure that decisions pertaining to the purchase of food, together with the use and disposal of plastic crockery/cutlery, should at all times include assessing the environmental implications as well as such factors as cost and nutritional value. The notification By UGC for use of junk food in the premises shall be strictly followed.
10. **Purchasing:** For the purchase of various items including services, materials, equipment and different types of consumable items, DIT University, Dehradun wherever possible, would undertake services where the probability of environmental harm is the least.
11. The university also commits for Plastic free environment in premises.

The policy shall be swotted annually or as per requirement and shall be communicated to all stake-holders.



A handwritten signature in blue ink, appearing to be "Anand", is written next to the university logo.

Water Use in University & Sources of Water

Water Uses

1. **Human** - Drinking water – Toilets - Bathrooms
2. **Fire-Fighting**
3. **Horticulture** - Trees and Green Area
4. **Mess and Cafeteria**
5. **Labs**

Sources of Incoming Water

- a. Borewell - 2 Nos.
- b. Supply from public source - 2 Nos.
- c. Water treated by STP

Details of Occupancy

DIT UNIVERSITY-OCCUPANCY DATA

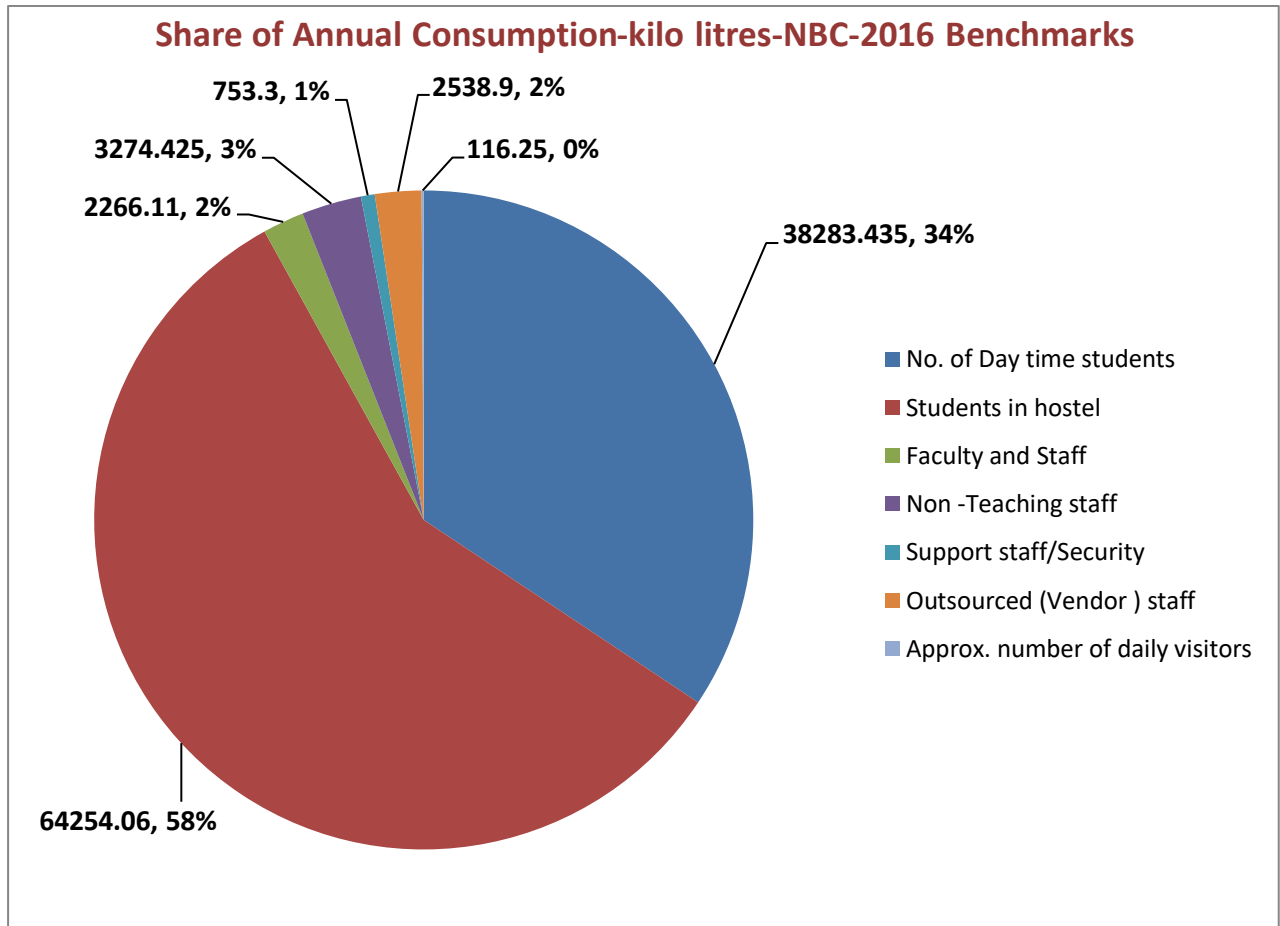
| Sr. No | Description | Qty-Nos | No of Days of Occupancy |
|--------|-------------------------------|---------|-------------------------|
| 1 | No of Day Time Students | 3501 | 243 |
| 2 | Student in Hostel | 1356 | 351 |
| 3 | Faculty and Staff | 218 | 231 |
| 4 | Non-Teaching Staff (Damion) | 245 | 297 |
| 5 | Support Staff/ Security | 54 | 310 |
| 6 | Outsourced (Vendor) Staff | 182 | 310 |
| 7 | Approx. No. of daily visitors | 25 | 310 |



Annual Water consumption benchmark as per NBC-2016

| Sr. No. | Description | Quantity Nos. | No. of Days of Occupancy | Consumption per capita per day as per NBC-2016 | Annual Consumption-kilo litres |
|--|----------------------------------|---------------|--------------------------|--|--------------------------------|
| 1 | No. of Day time students | 3501 | 243 | 45 | 38283.435 |
| 2 | Students in hostel | 1356 | 351 | 135 | 64254.06 |
| 3 | Faculty and Staff | 218 | 231 | 45 | 2266.11 |
| 4 | Non -Teaching staff | 245 | 297 | 45 | 3274.425 |
| 5 | Support staff/Security | 54 | 310 | 45 | 753.3 |
| 6 | Outsourced (Vendor) staff | 182 | 310 | 45 | 2538.9 |
| 7 | Approx. number of daily visitors | 25 | 310 | 15 | 116.25 |
| Total consumption of Occupants as per NBC-2016 bench mark | | | | | 111486.48 |

Share of Annual consumption-NBC-2016



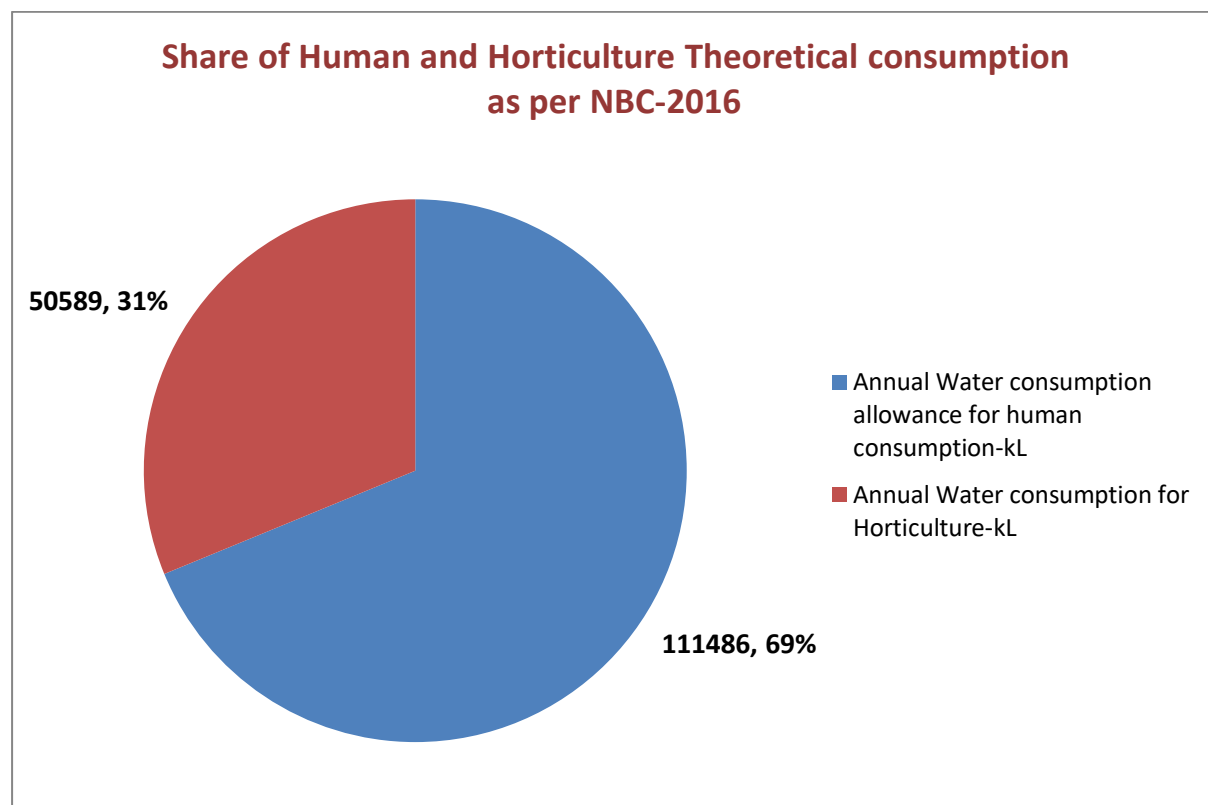
From above Pie Chart it is observed that 58 % of total annual water consumption-Theoretical allowance is for students in hostel and 34 % of benchmark consumption is by Day time students. Only 8 % is used by faculty and staff, Non-teaching staff, support staff /Security, outsourced (vendor) staff and daily visitors.

The main focus of water conservation should be laid on hostels and water use by day time students. Special attention should be given to toilets used by students in hostels and toilet used by day time students

Share of Water Consumption as per NBC-2016-Norms

From the above graph it is evident that present actual consumption of water is lower than theoretical bench mark of water use as per NBC-2016.

| Annual water consumption theoretical allowance as per NBC-2016 | |
|---|---------------|
| Annual Water consumption allowance for human consumption-kL | 111486 |
| Annual Water consumption for Horticulture-kL | 50589 |
| Total annual Consumption (Allowance as per NBC-2016) | 162075 |



From above Pie chart it is evident more than 31 % water allowance is for Landscape purpose and balance 69 % for human consumption

Estimated Annual Consumption

Estimated annual consumption

| Sr. No. | Description | Percentage water consumption | Total Consumption for 179 days- Estimated-kl | No. of days of water use | Estimated annual consumption-kL |
|---------|--|------------------------------|--|--------------------------|---------------------------------|
| 1 | Students in Hostel | 58 | 42230 | 351 | 48029 |
| 2 | Day time students | 34 | | 243 | 19492 |
| 3 | Faculty and staff | 2 | | 231 | 1090 |
| 4 | Non-teaching staff | 3 | | 297 | 2102 |
| 5 | Outsourced vendor staff | 2 | | 310 | 1463 |
| 6 | Support staff/security | 1 | | 310 | 731 |
| | Total Annual estimated use of Water-Human consumption | | | | 72907 |
| | Estimated annual consumption for Horticulture | | | | 50589 |
| | Total Annual estimated use of Water-Human consumption +Horticulture | | | | 123496 |

Comparison of actual and theoretical annual water consumption

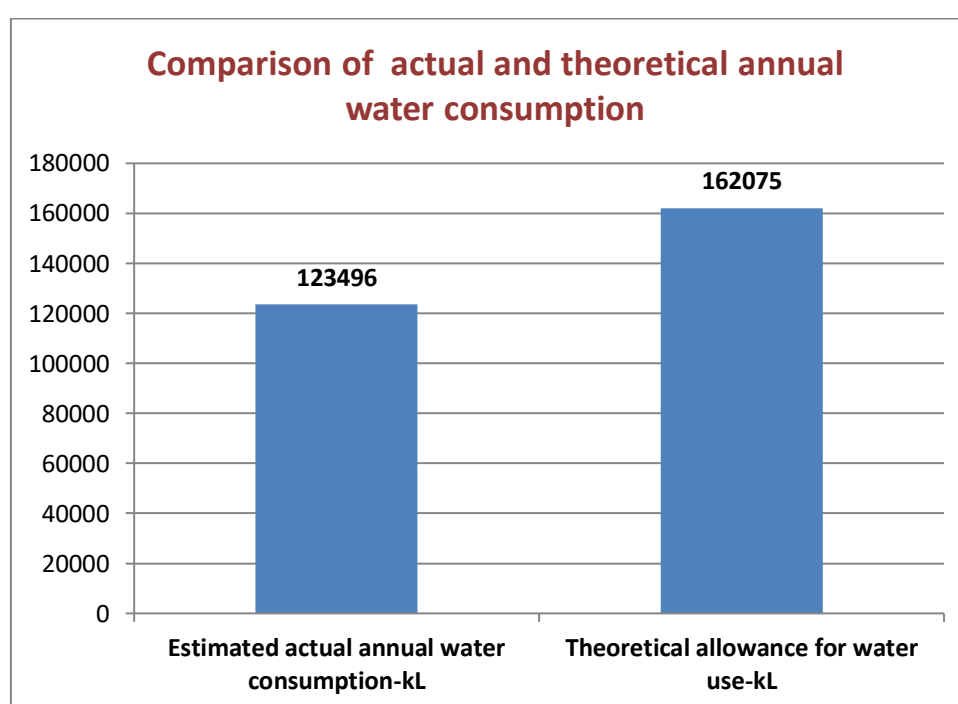
| | |
|---|---------------|
| Estimated actual annual water consumption-kL | 123496 |
| Theoretical allowance for water use-kL | 162075 |

Total Turf Area

Total Turf Area = 1.98 Hectares = 19800 Sq. mts.

Water Consumption - Green Area

| S.No. | Total area-sq.mts. | Allowance lts/day/sq.mts. | Total daily allowance-kL | Annual Allowance-kL |
|-------|--------------------|---------------------------|--------------------------|---------------------|
| 1 | 19800 | 7 | 138.6 | 50589 |



Water requirement as per NBC-2016 is attached in Annexure-C

There is ample awareness of management of university campus towards sustainability. Management of university is very instrumental in spearheading movement of sustainable practices in running of university and also facilitating dissemination of these practices to all students studying in this campus. It is through support of management and active involvement of other stake holders and staff members that this university has managed sustainable practices by being proactively initiating suitable actions for the same.

In all matters of resource use, there is effective implementation of 3R's. **Reduction** of resource use, **Re-cycling** of resources and also **Re-use**. It is for attaining objectives of sustainability.


STP & Water Test Reports

STP is installed in campus and is used for re-use of treated water.

During audit, it has been seen that a lot of work for conservation of water has already been taken. The quality of water is also periodically tested and the result of testing are given here under for reference

Water Test Reports

Water quality is regularly monitored. Water test reports are attached here with.



ITL LABS PVT. LTD.TM
Govt. Approved Test House
 B-283-284, Mangolpuri, Industrial Area, Phase-I, Delhi-110 083
 Ph.:+91-11-27915654, 27915608, Cust. Care No. 9891317619
 E-mail : itllabs@gmail.com
 Approval No. : NW9(14)/LAB

TEST REPORT


| | | | |
|--------------------|--|----------------------|--------------|
| Report No. | : C202107070045 | Date of Reporting | : 29/10/2021 |
| Issued to | : Monitor Water Experts Pvt. Ltd., Delhi edition | Date of Sampling | : 23/10/2021 |
| | | Test Started on | : 25/10/2021 |
| | | Issue of test report | : 29/10/2021 |
| Location of sample | : DIT University | Batch No. | : None |
| Nature of Samples | : Drinking Water | Sample Qty. | : 2 liters |

Table 1 Organoleptic and Physical Parameters

| S. No. | Parameters | Results | Complete test as per IS:10500-2012 | | Detection Limit | Test Method |
|--------|------------------------------|-----------|------------------------------------|-------------------|-----------------|-----------------------|
| | | | Acceptable Limit | Permissible Limit | | |
| i | Colour, Hazen units | <1.0 | 5 Max | 15 Max | 1.0 | IS:3025 (Pt-4)-1983 |
| ii | Odour | Agreeable | Agreeable | Agreeable | - | IS:3025 (Pt-5)-1983 |
| iii | Taste | Agreeable | Agreeable | Agreeable | - | IS:3025 (Pt-7&8)-1984 |
| iv | pH Value | 7.26 | 6.5 to 8.5 | No relaxation | 0.01 | IS:3025 (Pt-11)-1983 |
| v | Turbidity, NTU | <1.0 | 1 Max | 5 Max | 1.0 | IS:3025 (Pt-10)-1984 |
| vi | Total Dissolved solids, mg/l | 26 | 500 Max | 2000 Max | 1.0 | IS:3025 (Pt-16)-1984 |

Table 2 General Parameters Concerning Substances Undesirable in Excessive Amounts

| | | | | | | |
|-------|--|--------|------------------|------------------|------|------------------------|
| vii | Calcium (as Ca), mg/l | 8.60 | 75 Max | 200 Max | 0.2 | IS:3025 (Pt-40)-1991 |
| viii | Chloride (as Cl), mg/l | 6.23 | 250 Max | 1000 Max | 0.2 | IS:3025 (Pt-32)-1988 |
| ix | Fluoride (as F), mg/l | BDL | 1 Max | 1.5 Max | 0.1 | IS:3025 (Pt-60)-2008 |
| x | Free residual chlorine, mg/l | BDL | 0.2 Min | 1 Min | 0.02 | IS:3025 (Pt-26)-1986 |
| xi | Iron (as Fe), mg/l | BDL | 1.0 Max | No relaxation | 0.05 | IS:3025 (Pt-53)-2003 |
| xii | Magnesium (as Mg), mg/l | 6.20 | 30 Max | 100 Max | 0.2 | IS:3025 (Pt-46)-1994 |
| xiii | Nitrate (as NO ₃), mg/l | BDL | 45 Max | 100 Max | 0.1 | IS:3025 (Pt-34)-1988 |
| xiv | Sulphate (as SO ₄), mg/l | 8.2 | 200 Max | 400 Max | 1.0 | IS:3025 (Pt-24)-1986 |
| xv | Total Alkalinity (as CaCO ₃), mg/l | 3.54 | 200 Max | 600 Max | 0.5 | IS:3025 (Pt-23)-1986 |
| xvi | Total Hardness (as CaCO ₃), mg/l | 6.32 | 200 Max | 600 Max | 0.5 | IS:3025 (Pt-21)-2009 |
| xvii | Total Arsenic (as As), mg/l | BDL | 0.01 Max | No relaxation | 0.01 | IS:3025 (Pt-37)-1988 |
| xviii | Electrical Conductivity, μs/cm | 64.3 | - | - | 1.0 | IS:3025 (Part-14)-1985 |
| xix | Total Coliform/100ml | Absent | Should be absent | Should be absent | 1.0 | IS:1622:1981 |
| xx | Escherichia coli/100ml | Absent | Should be absent | Should be absent | | IS:1622:1981 |
| xxi | Fecal coliform/100ml | Absent | - | - | | IS:1622:1981 |



(Authorised Signatory)



ITL LABS PVT. LTD.TM

Govt. Approved Test House

B-283-284, Mangolpuri, Industrial Area, Phase-I, Delhi-110 083

Ph.:+91-11-27915654, 27915608, Cust. Care No. 9891317619

E-mail : itllabs@gmail.com

Approval No. : NWS(14)/LAB

TEST REPORT

| | | | |
|--------------------|---|----------------------|--------------|
| Report No. | : C202107070045 | Date of Reporting | : 29/10/2021 |
| Issued to | : Mentor Water Experts Pvt. Ltd. Dehradun | Date of Sampling | : 23/10/2021 |
| | | Test Started on | : 26/10/2021 |
| | | Issue of test report | : 29/10/2021 |
| Location of sample | : DIT University | Batch No. | : None |
| Nature of Samples | : Drinking Water | Sample Qty. | : 2 liters |

Table 1 Organoleptic and Physical Parameters

| S. No. | Parameters | Results | Complete test as per IS:10500-2012 | | Detection Limit | Test Method |
|--------|------------------------------|-----------|------------------------------------|-------------------|-----------------|-----------------------|
| | | | Acceptable Limit | Permissible Limit | | |
| i | Colour, Hazen units | <1.0 | 5 Max | 15 Max | 1.0 | IS:3025 (Pt-4)-1983 |
| ii | Odour | Agreeable | Agreeable | Agreeable | - | IS:3025 (Pt-5)-1983 |
| iii | Taste | Agreeable | Agreeable | Agreeable | - | IS:3025 (Pt-7&8)-1984 |
| iv | pH Value | 7.32 | 6.5 to 8.5 | No relaxation | 0.01 | IS:3025 (Pt-11)-1983 |
| v | Turbidity, NTU | <1.0 | 1 Max | 5 Max | 1.0 | IS:3025 (Pt-10)-1984 |
| vi | Total Dissolved solids, mg/l | 32 | 500 Max | 2000 Max | 1.0 | IS:3025 (Pt-16)-1984 |

Table 2 General Parameters Concerning Substances Undesirable in Excessive Amounts

| | | | | | | |
|-------|--|--------|------------------|------------------|------|------------------------|
| vii | Calcium (as Ca), mg/l | 3.62 | 75 Max | 200 Max | 0.2 | IS:3025 (Pt-40)-1991 |
| viii | Chloride (as Cl), mg/l | 8.40 | 250 Max | 1000 Max | 0.2 | IS:3025 (Pt-32)-1988 |
| ix | Fluoride (as F), mg/l | BDL | 1 Max | 1.5 Max | 0.1 | IS:3025 (Pt-60)-2008 |
| x | Free residual chlorine, mg/l | BDL | 0.2 Min | 1 Min | 0.02 | IS:3025 (Pt-26)-1986 |
| xi | Iron (as Fe), mg/l | BDL | 1.0 Max | No relaxation | 0.05 | IS:3025 (Pt-53)-2003 |
| xii | Magnesium (as Mg), mg/l | 8.91 | 30 Max | 100 Max | 0.2 | IS:3025 (Pt-46)-1994 |
| xiii | Nitrate (as NO ₃), mg/l | BDL | 45 Max | 100 Max | 0.1 | IS:3025 (Pt-34)-1988 |
| xiv | Sulphate (as SO ₄), mg/l | 7.8 | 200 Max | 400 Max | 1.0 | IS:3025 (Pt-24)-1986 |
| xv | Total Alkalinity (as CaCO ₃), mg/l | 6.25 | 200 Max | 600 Max | 0.5 | IS:3025 (Pt-23)-1986 |
| xvi | Total Hardness (as CaCO ₃), mg/l | 5.34 | 200 Max | 600 Max | 0.5 | IS:3025 (Pt-21)-2009 |
| xvii | Total Arsenic (as As), mg/l | BDL | 0.01 Max | No relaxation | 0.01 | IS:3025 (Pt-37)-1988 |
| xviii | Electrical Conductivity, μ s/cm | 72.51 | - | - | 1.0 | IS:3025 (Part-14)-1985 |
| xix | Total Coliform/100ml | Absent | Should be absent | Should be absent | 1.0 | IS:1622:1981 |
| xx | Escherichia coli/100ml | Absent | Should be absent | Should be absent | - | IS:1622:1981 |
| xxi | Fecal coliform/100ml | Absent | - | - | - | IS:1622:1981 |

(Authorised Signatory)

Program on Water use

Regular Program on Water use are conducted



Report

Event: Ganga Utsav [38 cadets]

11-UK(G)Bn. NCC DITU

Date: 2nd Nov. 2021

Time: 9:30 pm stre

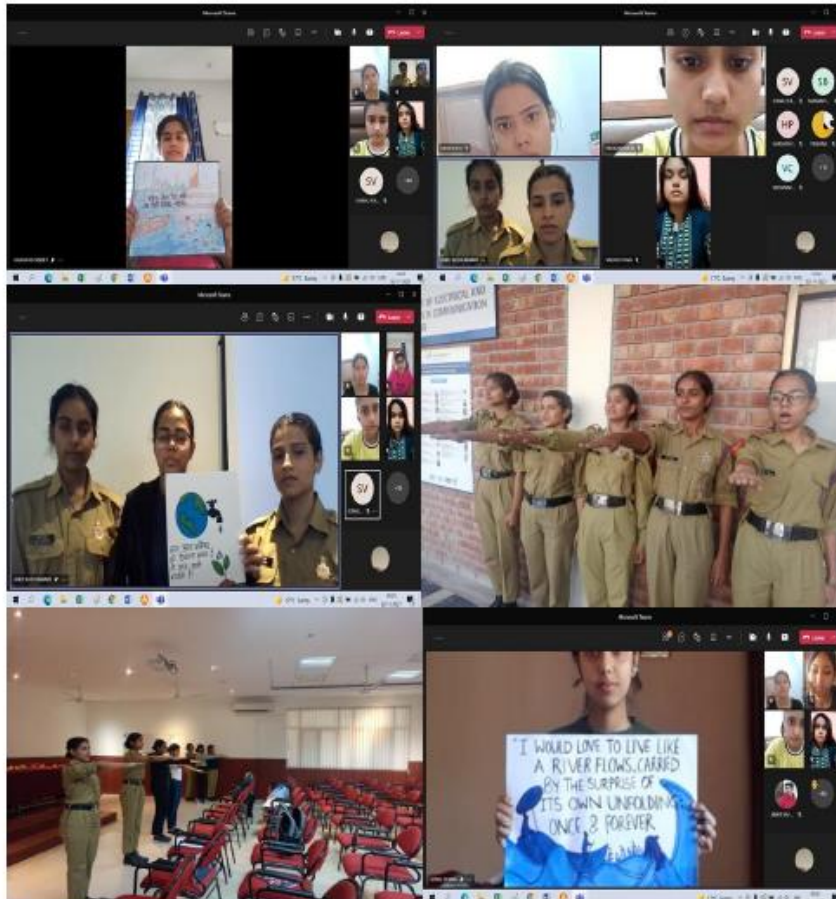
NCC Cadets of DIT university conducted a webinar on Ganga Utsav. It was an online event and the Cadets participated in this event with full enthusiasm.

This webinar on Ganga Utsav was organized to make people aware about the importance of strengthening of the public – river connect. This event was conducted on 2nd of November 2021 from 9:30am to 10:30am. It was an online event. The cadets prepared there slogans. Ishita Gusain were the hosts of the event. ANO Lt. (Dr.)Brajlata Chauhan started with quote

**“Ganga ko nirmal rahne do
Ganga ko aviral bahne do”**

And shared her views about the importance of Ganga and encouraged us to revive the deep cultural connect with Maa Ganga, for sustainable healthy present and future generations . As a part of the celebration first year cadets prepared their slogans in form of poster with great enthusiasm and dedication . Cdt Aditi Chauhan shared her views in form of speech.





Dr.Naveen Singhal motivated all of us as the Ganga is the foremost of India's seven sacred rivers, winding fifteen hundred miles from the glaciers of Himalayas through twenty nine cities and seventy towns of the northern Indian plains as it plays a big role in our past, present and future.

At the end of the program Cdt Ankit Kumawat and Cdt Aditi Chauhan took the pledge

The Ganga is considered a lifeline of India because it provides water to 40% of India's population. Additionally, it is a source of irrigation for a wide variety of crops.

"Gita and Ganga constitute, between themselves, the essence of Hinduism: one its theory, and the other is practice."

Water Use Study - Flow Rate

Flow Rate of Installed Fixtures Measured - Flow-Litres per Minute

| Sno | Location | Wash Basin | | |
|-----|---|------------|-------|------|
| | | | | |
| 1 | Vastu Block - Gents Toilet | 5.69 | - | - |
| 2 | Vastu Block - Ladies Toilet | 20.00 | 14.08 | - |
| 3 | Vastu Block - Gents Toilet | - | - | - |
| 4 | Pharmacy - Gents Toilet | 24.49 | 19.48 | |
| 5 | Pharmacy - Ladies Toilet | 4.29 | 5.34 | 3.80 |
| 6 | Sarojini Girls Hostel Mess | 8.67 | 43.17 | 2.31 |
| 7 | Kasturba Girls Hostel - Triple share Room | - | - | - |
| 8 | Kasturba Girls Hostel - Single Share Room | - | - | - |
| 9 | Sarojani Girls Hostel - Triple share Room | 16.85 | - | - |
| 10 | Sarojani Girls Hostel - Triple Bed 3 Room Apartment | 5.83 | - | - |
| 11 | Sarojani Girls Hostel - Twin share Twin Bed Room | 14.29 | - | - |
| 12 | Boys Hostel - Bhabha Block | 2.31 | - | - |
| 13 | Boys Hostel - Sarabhai Block | 16.71 | 30.00 | - |
| 14 | Boys Hostel - Mess | 6.85 | 6.83 | 3.15 |

Flow Rate Measurement -Flow-Liters per Minute

| Sno | Location | Wash Basin | | Tap |
|-----|---|------------|-------|-------|
| | | | | |
| 1 | Kasturba Girls Hostel - Triple share Room | 9.38 | - | - |
| 2 | Kasturba Girls Hostel - Single Share Room | 11.76 | - | - |
| 3 | Sarojani Girls Hostel - Triple share Room | 9.92 | - | - |
| 4 | Sarojani Girls Hostel - Triple Bed 3 Room Apartment | 7.21 | - | - |
| 5 | Sarojani Girls Hostel - Twin share Twin Bed Room | 17.65 | - | 19.54 |
| 6 | Boys Hostel - Raman Block | 21.74 | 5.52 | - |
| 7 | Boys Hostel - Bose Block | 27.52 | 24.69 | - |
| 8 | Boys Hostel - Bhabha Block | 32.79 | - | - |
| 9 | Boys Hostel - Sarabhai Block | 22.22 | - | - |
| 10 | Boys Hostel - Mess | - | - | - |

Flow Rate Measurement -Flow-Liters per Minute

| Sno | Location | Sink | | | |
|------------|-----------------------------|--------------|-------------|--------------|-------------|
| 1 | Pharmacy Chemistry Lab - II | 12.20 | 7.80 | 11.01 | 5.24 |
| 2 | Chemistry Lab | 3.85 | 4.01 | 4.32 | 3.88 |

Flow of fixtures is noticed to be higher. These are required to be replaced with efficient low flow plumbing fixtures specially for Hostel room toilets. At common places this can be presently managed with installed valves. Flow restrictors can also be considered for reduction of water flow.

Inventory of Toilet

| Sr. no | Location | URINAL | WC | WASH BASIN | Sink | Bath Area Tap | Tap | Sets |
|--------|--|--------|----|------------|------|---------------|-----|------|
| 1 | Chanakya Admin Block - Gents Toilet | 6 | 2 | 2 | | | | 3 |
| 2 | Chanakya Admin Block - Ladies Toilet | | 4 | 2 | | | | |
| 3 | Chanakya Admin Block - Handicap Toilet | | 1 | 1 | | | | |
| 4 | Vastu Block - Gents Toilet | 2 | 1 | 1 | | | | 4 |
| 5 | Vastu Block - Ladies Toilet | | 2 | 2 | | | | |
| 6 | Vastu Block - Gents Toilet | 3 | 4 | 3 | | | | |
| 7 | Vastu Block - Ladies Toilet | | 3 | 2 | | | | |
| 8 | Pharmacy - Gents Toilet | 2 | 1 | 2 | | | | 3 |
| 9 | Pharmacy - Ladies Toilet | | 2 | 3 | | | | |
| 10 | Pharmacy Chemistry Lab - II | | | | 32 | | | |
| 11 | Vedanta Block G. Floor - Gents Toilet | 7 | 2 | 3 | | | | |
| 12 | Vedanta Block G. Floor - Ladies Toilet | | 5 | 3 | | | | |
| 13 | Vedanta Block 1st Floor to 4th floor - Gents Toilet | 13 | 4 | 5 | | | | 4 |
| 14 | Vedanta Block 1st Floor to 4th floor - Ladies Toilet | | 10 | 10 | | | | |
| 15 | Vedanta Block 5th Floor - Gents Toilet | 12 | 3 | 4 | | | | |
| 16 | Vedanta Block 5th Floor - Ladies Toilet | | 7 | 4 | | | | |
| 17 | Sarojani Girls Hostel - Security Office | | 1 | 2 | | | 1 | |
| 18 | Sarojani Girls Hostel Mess | | 6 | | | | | |
| 19 | Kasturba Girls Hostel - Triple share Room | | 2 | 1 | | 1 | | 32 |
| 20 | Kasturba Girls Hostel - Single Share Room | | 1 | 1 | | 1 | | 23 |
| 21 | Sarojani Girls Hostel - Triple share Room | | 2 | 1 | | 1 | | 45 |
| 22 | Sarojani Girls Hostel - Single Share Room | | 1 | 1 | | 1 | | |

| | | | | | | | | |
|----|---|----|---|---|----|---|---|-----|
| 23 | Sarojani Girls Hostel - Triple Bed 3 Room Apartment | | 1 | 1 | | 1 | | |
| 24 | Sarojani Girls Hostel - Twin share Room | | 1 | 1 | | 1 | | |
| 25 | Sarojani Girls Hostel - Visitors | | 1 | 1 | | | 1 | |
| 26 | Vivekanand Block - Gents Toilet | 2 | 1 | 2 | | | | |
| 27 | Vivekanand Block - Ladies Toilet | | 2 | 2 | | | | |
| 28 | Vivekanand Block - Gents Toilet Staff | 1 | 1 | 1 | | | | |
| 29 | Vivekanand Block - Ladies Toilet Staff | | 1 | 1 | | | | |
| 30 | Vivekanand Block - Gents Toilet | 10 | 7 | 6 | | | | 5 |
| 31 | Vivekanand Block - Ladies Toilet | | 8 | 9 | | | | |
| 32 | Chemistry Lab | | | | 16 | | | |
| 33 | Workshop - Gents Toilet | 6 | 3 | 4 | | | | 4 |
| 34 | Workshop - Ladies Toilet | | 4 | 3 | | | | |
| 35 | Workshop - Staffs Toilet | | 1 | 3 | | | | |
| 36 | Civil and Petroleum Block - Gents Toilet | 5 | 4 | 2 | | | | 6 |
| 37 | Civil and Petroleum Block - Ladies Toilet | | 4 | 4 | | | | |
| 38 | Medical Room | | 1 | 1 | | | | |
| 39 | Boys Hostel - Raman Block | 3 | 3 | 3 | | 3 | | 36 |
| 40 | Boys Hostel - Bose Block | 3 | 3 | 3 | | 3 | | 28 |
| 41 | Boys Hostel - Bhabha Block | | 1 | 1 | | 1 | | 72 |
| 42 | Boys Hostel - Sarabhai Block | 1 | 1 | 2 | | 1 | | 108 |
| 43 | Boys Hostel - Mess | | | 5 | | | | |

Observations on Water Use

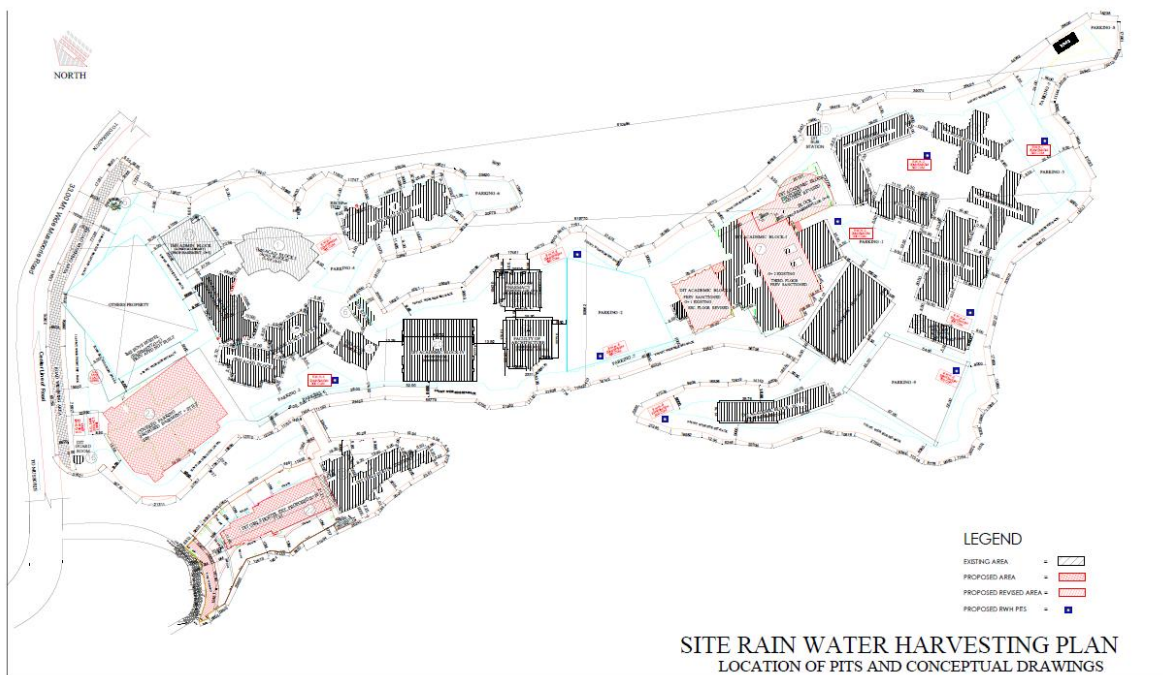
The following points needs attention and required to be addressed. The saving targets over NBC-2016 requirement should be fixed for next 12 months and practice of recording and reviewing of water use on periodic basis for pointing out any sudden variation is required to be followed

| Sr. No. | Issue | Standard | Shortcomings | Recommendations |
|---------|---|----------------------------------|--|---|
| 1 | Flow of water in plumbing fixtures | GRIHA /IGBC | Flow is measured is high | High plumbing fixtures are replaced with low flow fixtures whenever these are replaced after wear and tear. Till the time the flow should be regulated from valves where ever existing for wash Basin and Sinks. Flow restrictors be also considered. |
| 2 | Cisterns installed for flushing | GRIHA /IGBC | Double flow cisterns are installed | Awareness is required to be created for use of Dual flow fixtures for water conservation. |
| 3 | Rain Water harvesting system | Central Water Ground Water Board | 20 Nos. Rain Water harvesting pits are installed | These are maintained and functioning effectively. |
| 4 | Water Meters | NBC-2016 | Water Meters for extraction source are installed | Water Meters be got installed for Individual blocks, Labs and also for water used for horticulture/landscaping purpose. |
| 5 | Bills and Stickers for water conservation | Best practices | Presently installed at few locations only | The stickers be installed near water use points for conservation of water. Especially in Hostel Toilets, these are required to be put. |

Rain Water Harvesting System

Presently there are no Rain Water harvesting system pits have been installed.

There is planning and action initiated is at a very advance stage for executing work of construction of Rain water harvesting pits.



The regular cleaning and de-silting process are carried out for maintenance of Rain water harvesting pits.

Sustainable Development Goals

Sustainable development should always be practiced in all activities of university. The university administration, students and staff are already aware and efforts are always put to meet requirement as per applicability.

SUSTAINABLE DEVELOPMENT GOALS



The principal, teaching and Non-teaching staff is aware of these goals and there is a practice of considering these goals while taking decisions in university.

Clear Water and Sanitation is one of Sustainable development goals of United Nations

Summarization of Water Audit Findings

A Water Audit was conducted; the major relevant aspects that were covered in this audit and present level of performance of University are summarized here:

- 1. Awareness of Staff:** The concerned staff is very much aware about importance of and there are excellent records maintained and kept updated for environmental aspects. This attitude has made the implementation of environmental aspects for activities of university easier and effective.
- 2. Water consumption:**
The estimated water consumption is below NBC-benchmarks and further reduction targets are required to be set.
- 3. Measurement of Incoming Water:** Water is received in university from three sources. Meters are required to be installed for exact measurement and comparison of consumption month and month and assess significant variance and cause should be found and addressed for keeping a check on monthly basis only.
- 4. Policies, planning and Commitment:** The University has already in placed an Environment and Green policy that covers all concerning aspects including water use.
- 5. University Plumbing and sanitation:** The concerned university staff is maintaining the details of all constructed areas of university building and inventory of plumbing and sanitation systems for effective management.
- 6. Recharging of Ground water:** Presently there is no rain water harvesting pit installed in university campus. Planning is underway and rain water harvesting pits are planned to be installed in very near future.
- 7. Turf area:** The university is has large turf area to the extent of 19800 sq. mts. There is substantial requirement of water for managing grass. The efforts are made to manage turf area.
- 8. Native Plantation and water use:** There are plans to plant only native species of trees for survival on use of lower quantity of water thus reducing water requirement.
- 9. Sewage treatment plant:** Two nos. STP are installed after discarding one old STP. The operation is regularly monitored and all the water thus treated is reused.
- 10. Procurement Procedures:**
The procurement activities of an institution are very significant for making it sustainable and also in mitigation of water foot print. The purchase committee is required to be sensitized for considering flow rate of fixtures also while making future purchases.
- 11. Signage:** signage for creating awareness for water conservation are required to be put at or near all places water is used. **Major consumption of water by humans is by**

hostel students and day time students, accordingly area of water use by them is required to be provided with signage.

12. Quality of Water

Water used in university campus is regularly tested as per requirement.

13. Sustainable development goals

The university staff and students are aware of sustainability goals and practicing the same in their actions as per applicability. Sanitation and water quality is one of seventeen goals. All stake holders are aware of their responsibility




14. On-site composting and use of manure:


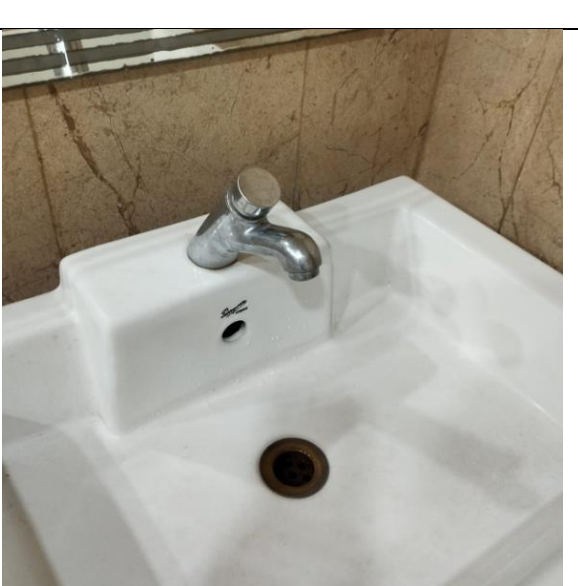

Leaves and other botanical waste are treated in composting plant and manure thus formed is used in place of chemical fertilizer and no fertilizer is purchased for plantation.




15. Water efficient fixtures plumbing and sanitation fixtures: Water efficient fixtures have been installed like push button type taps, health faucet and twin button type cisterns have been installed. Awareness on use of twin knob cisterns is required to be created through signage.




16. Leak Test program: To manage leakage and wastage of water of whatever type a leak survey program is being prepared and periodicity and role matrix is being planned. This will go a long way to stop leakages by proactive action.

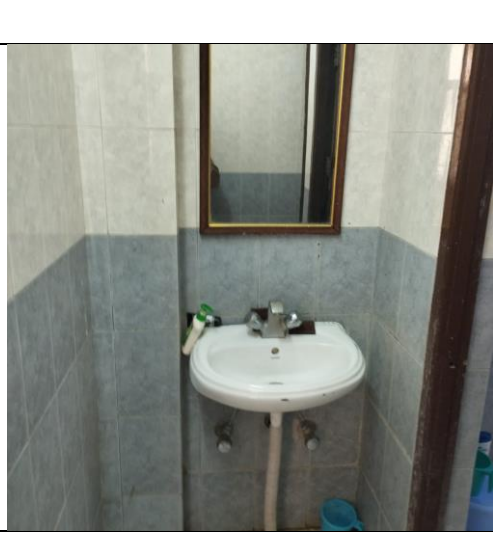
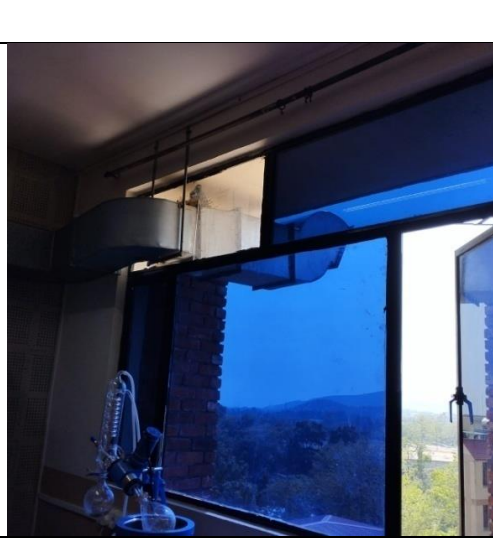
Annexure-A- Photographs related to use of water


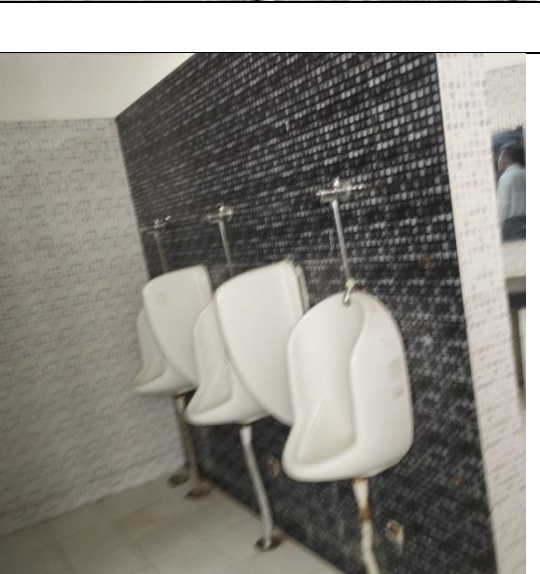
| Photographs related to Environment issue related to water use -DIT university- Dehradun | | |
|---|---|--|
| S. No. | Description | Issue |
| 1 |  | Incoming water pipes –location for installation of Meters on incoming water supply |
| 2 |  | Leakage in water pipe |
| 3 |  | Leakage in external yard hydrant – water leakage survey should be planned with set periodicity |

| | | |
|----------|---|---|
| <p>4</p> |  | <p>STP installed-good practice</p> |
| <p>5</p> |  | <p>Good practice-Push and use type taps installed for saving water wastage.</p> |
| <p>6</p> |  | <p>Good practice-Push and use type taps installed for saving water wastage.</p> |

| <p>7</p> |  <p>Water Treatment Plant</p> <table border="1"> <thead> <tr> <th>Tankage</th> <th>Capacity (Litres)</th> </tr> </thead> <tbody> <tr> <td>UG Incoming Tank</td> <td>200000</td> </tr> <tr> <td>Fire Tank</td> <td>50000</td> </tr> <tr> <td>Raw Water Tank</td> <td>150000</td> </tr> <tr> <td>Water Treatment Plant-1</td> <td>30000 litres/hour</td> </tr> <tr> <td>Water Treatment Plant-2</td> <td>30000 litres/hour</td> </tr> <tr> <td>Treated Water Tank-1</td> <td>150000</td> </tr> <tr> <td>Treated Water Tank-2</td> <td>150000</td> </tr> <tr> <td>Total Water Storage</td> <td>700000 Litres</td> </tr> </tbody> </table> <p>WATER TREATMENT PLANT</p> <p>INDUCED DRINKING SUPPLY WATER RESERVOIR CAPACITY - 200 KL</p> <p>FIRE TANK CAPACITY - 50 KL</p> <p>RAW WATER TANK CAPACITY - 150 KL</p> <p>TREATED WATER TANK - 1 (50 KL)</p> <p>TREATED WATER TANK - 2 (50 KL)</p> <p>TREATED WATER PLANT - 1 (30 KL/H)</p> <p>TREATED WATER PLANT - 2 (30 KL/H)</p> | Tankage | Capacity (Litres) | UG Incoming Tank | 200000 | Fire Tank | 50000 | Raw Water Tank | 150000 | Water Treatment Plant-1 | 30000 litres/hour | Water Treatment Plant-2 | 30000 litres/hour | Treated Water Tank-1 | 150000 | Treated Water Tank-2 | 150000 | Total Water Storage | 700000 Litres | <p>Water treatment plant</p> |
|----------------------------|---|--|-------------------|------------------|--------|-----------|-------|----------------|--------|-------------------------|-------------------|-------------------------|-------------------|----------------------|--------|----------------------|--------|----------------------------|----------------------|------------------------------|
| Tankage | Capacity (Litres) | | | | | | | | | | | | | | | | | | | |
| UG Incoming Tank | 200000 | | | | | | | | | | | | | | | | | | | |
| Fire Tank | 50000 | | | | | | | | | | | | | | | | | | | |
| Raw Water Tank | 150000 | | | | | | | | | | | | | | | | | | | |
| Water Treatment Plant-1 | 30000 litres/hour | | | | | | | | | | | | | | | | | | | |
| Water Treatment Plant-2 | 30000 litres/hour | | | | | | | | | | | | | | | | | | | |
| Treated Water Tank-1 | 150000 | | | | | | | | | | | | | | | | | | | |
| Treated Water Tank-2 | 150000 | | | | | | | | | | | | | | | | | | | |
| Total Water Storage | 700000 Litres | | | | | | | | | | | | | | | | | | | |
| <p>8</p> |  | <p>Gaps around Pipes-Contamination of water can happen</p> | | | | | | | | | | | | | | | | | | |
| <p>9</p> |  <p>Go Green & Help Save the Environment.</p> | <p>Good Practice-Green initiative signage</p> | | | | | | | | | | | | | | | | | | |

| | | |
|-----------|---|--|
| <p>10</p> |  | <p>Audit team working in Field taking measurements</p> |
| <p>11</p> |  | <p>Audit team working in Field taking measurements</p> |
| <p>12</p> |  | <p>Audit team working in Field taking measurements</p> |

| | | |
|----|---|---|
| 13 |  | Health Faucet installed |
| 14 |  | Normal Supply type tap |
| 15 |  | Fume Hood exhaust duct-Discharged in appropriately without raising height |

| | | |
|----|--|--|
| 16 |  | Two coloured dust bins lying abandoned. At all the places single Stainless steel dust bin is installed |
| 17 |  | Push type flushing knobs are provided for water conservation –Good practice |

Annexure-B-Sample recording of STP operational parameters

Mentor Water Experts Pvt. Ltd. Sewage Treatment Plant 500 KLD Logbook Date: 15/09/20
Site: DIT University Day:

| Sl. No. | Check Point | Status | 4:00 | 8:00 | 12:00 | 16:00 | 18:00 | 20:00 | 22:00 | 24:00 | 2:00 | 4:00 | |
|---------------------------|----------------------|--------------------------|---------------|--------|---------------|-------|---------|-----------|------------|--------|-----------|---------|-------|
| Primary Treatment | | | | | | | | | | | | | |
| 1 | Bar Screen | Clear | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | |
| 2 | DST | Clear | OK | OK | OK | OK | OK | OK | OK | OK | OK | OK | |
| 3 | FOT Level | OK | 70% | 80% | 70% | 60% | 60% | 70% | 70% | 80% | 80% | 70% | |
| STP 265 KLD | | | | | | | | | | | | | |
| 1 | Inlet Flow | m ³ /hr | | | | | | | | | | | |
| 2 | Aerobic chamber | On/Off | ON | ON | ON | ON | ON | ON | ON | ON | ON | ON | |
| 3 | Aerator | Run/Stop | Run | Run | Run | Run | Run | Run | Run | Run | Run | Run | |
| 4 | Flow | On/Off | ON | ON | ON | ON | ON | ON | ON | ON | ON | ON | |
| 5 | Lamella | On/Off | ON | ON | ON | ON | ON | ON | ON | ON | ON | ON | |
| 6 | Sludge recirculation | On/Off | ON | ON | ON | ON | ON | ON | ON | ON | ON | ON | |
| 7 | Sludge Drained | Min | | | | | | | | | | | |
| 8 | Chlorine Dosing | On/Off | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | |
| 9 | Blower Pressure | kg/cm ² | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | |
| 10 | Fiber left pressure | < 1.1 kg/cm ² | | | | | | | | | | | |
| FMR 300 | | | | | | | | | | | | | |
| 1 | Inlet Flow | m ³ /hr | | | | | | | | | | | |
| 2 | Aerobic chamber | On/Off | ON | ON | ON | ON | ON | ON | ON | ON | ON | ON | |
| 3 | Aerator | Run/Stop | Run | Run | Run | Run | Run | Run | Run | Run | Run | Run | |
| 4 | Flow | On/Off | ON | ON | ON | ON | ON | ON | ON | ON | ON | ON | |
| 5 | Lamella | On/Off | ON | ON | ON | ON | ON | ON | ON | ON | ON | ON | |
| 6 | Sludge recirculation | On/Off | ON | ON | ON | ON | ON | ON | ON | ON | ON | ON | |
| 7 | Sludge Drained | Min | | | | | | | | | | | |
| 8 | Chlorine Dosing | On/Off | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | |
| 9 | Blower Pressure | kg/cm ² | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | |
| FMR 200 | | | | | | | | | | | | | |
| 1 | Inlet Flow | m ³ /hr | | | | | | | | | | | |
| 2 | Aerobic chamber | On/Off | ON | ON | ON | ON | ON | ON | ON | ON | ON | ON | |
| 3 | Aerator | Run/Stop | Run | Run | Run | Run | Run | Run | Run | Run | Run | Run | |
| 4 | Flow | On/Off | ON | ON | ON | ON | ON | ON | ON | ON | ON | ON | |
| 5 | Lamella | On/Off | ON | ON | ON | ON | ON | ON | ON | ON | ON | ON | |
| 6 | Sludge recirculation | On/Off | ON | ON | ON | ON | ON | ON | ON | ON | ON | ON | |
| 7 | Sludge Drained | Min | | | | | | | | | | | |
| 8 | Chlorine Dosing | On/Off | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | |
| 9 | Blower Pressure | kg/cm ² | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | |
| Tertiary Treatment | | | | | | | | | | | | | |
| 1 | BWT Level | OK | 70% | 70% | 60% | 50% | 60% | 60% | 60% | 60% | 60% | 60% | |
| 2 | Fiber DR pressure | < 1.1 kg/cm ² | | | | | | | | | | | |
| 3 | Outlet flow | m ³ /hr | | | | | | | | | | | |
| 4 | Backwash Pressure | kg/cm ² | | | | | | | | | | | |
| 5 | UV System | On/Off | OFF | ON | ON | ON | ON | ON | ON | ON | ON | ON | |
| 6 | UVT Level | OK | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | |
| 7 | UVF Pressure | kg/cm ² | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | |
| 8 | Fiber flow | Run/Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop | |
| 9 | UVT Level | OK | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | |
| UF Treatment | | | | | | | | | | | | | |
| 1 | UF Feed Tank Level | OK | 70% | 70% | 60% | 50% | 60% | 60% | 60% | 60% | 60% | 60% | |
| 2 | Inlet Pressure | < 1.1 kg/cm ² | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | |
| 3 | Permeate Pressure | < 1.1 kg/cm ² | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | |
| 4 | Permeate Flow | < 0.0 m ³ /hr | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 | |
| 5 | Reject Pressure | < 1.1 kg/cm ² | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | |
| 6 | Reject Flow | < 1.1 kg/cm ² | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | |
| 7 | Backwash Pressure | < 1.1 kg/cm ² | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | |
| 8 | Chemical Tank Level | < 10% | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | |
| 9 | UF Water Tank Level | OK | | | | | | | | | | | |
| | | | Inlet 200 KLD | SL | Inlet 300 KLD | SL | 265 KLD | Total | Outlet 500 | SL | UF Outlet | 265 KLD | Total |
| 4 | 7741 | | 65264 | 9711 | | | | 148264 | 1174 | | | | |
| 5 | 7742 | | 65264 | 9711 | | | | 148264 | 1174 | | | | |
| 6 | 7743 | | 65264 | 9711 | | | | 148264 | 1174 | | | | |
| | | | Day Total | 177.44 | | | 117.21 | Day Total | 177.44 | | | 177.44 | |
| | | | Parameter | Limit | Result | Unit | Name | Sign. | Engineer | Remark | | | |
| 1 | pH | 4.5 to 8.5 | 7.5 | | | | | | | | | | |
| 2 | TDS | < 2000 ppm | 1800 | | | | | | | | | | |
| 3 | MLSS | 30 to 35% | 35% | | | | | | | | | | |
| 4 | Chlorine level | 3 to 10 ppm | 7.5 | | | | | | | | | | |
| 5 | Colour | Colourless | 4.5 | | | | | | | | | | |
| 6 | Odor | Odorless | Nil | | | | | | | | | | |

Amey
10/9/2020

Annexure-C Water Requirement for Building

Table 1 Water Requirements for Buildings Other than Residences
(Clause 4.1.2)

| Sl No. | Type of Building | Domestic Per Day litre | Flushing Per Day litre | Total Consumption Per Day litre |
|--------|---|------------------------|------------------------|---------------------------------|
| (1) | (2) | (3) | (4) | (5) |
| i) | Factories including canteen where bath rooms are required to be provided | 30 per head | 15 per head | 45 per head |
| ii) | Factories including canteen where no bath rooms are required to be provided | 20 per head | 10 per head | 30 per head |
| iii) | Hospital (excluding laundry and kitchen) (see Note 2): | | | |
| | a) Number of beds not exceeding 100 | 230 per head | 110 per head | 340 per head |
| | b) Number of beds exceeding 100 | 300 per head | 150 per head | 450 per head |
| | c) Out patient department (OPD) | 10 per head | 5 per head | 15 per head |
| iv) | Nurses' homes and medical quarters | 90 per head | 45 per head | 135 per head |
| v) | Hostels | 90 per head | 45 per head | 135 per head |
| vi) | Hotel (up to 3 star) excluding laundry, kitchen, staff and water bodies | 120 per head | 60 per head | 180 per head |
| vii) | Hotel (4 star and above) excluding laundry, kitchen, staff and water bodies | 260 per head | 60 per head | 320 per head |
| viii) | Offices (including canteen) | 25 per head | 20 per head | 45 per head |
| ix) | Restaurants and food court including water requirement for kitchen: | | | |
| | a) Restaurants | 55 per seat | 15 per seat | 70 per seat |
| | b) Food court | 25 per seat | 10 per seat | 35 per seat |
| x) | Clubhouse | 25 per head | 20 per head | 45 per head |
| xi) | Stadiums | 4 per head | 6 per head | 10 per head |
| xii) | Cinemas, concert halls and theatres and multiplex | 5 per seat | 10 per seat | 15 per seat |
| xiii) | Schools/Educational institutions: | | | |
| | a) Without boarding facilities | 25 per head | 20 per head | 45 per head |
| | b) With boarding facilities | 90 per head | 45 per head | 135 per head |
| xiv) | Shopping and retail (mall) | | | |
| | a) Staff | 25 per head | 20 per head | 45 per head |
| | b) Visitors | 5 per head | 10 per head | 15 per head |
| xv) | Traffic terminal stations (see Notes 3 and 4) | | | |
| | a) Airports | 40 per head | 30 per head | 70 per head |
| | b) Railway stations (Junctions) with bathing facility | 40 per head | 30 per head | 70 per head |
| | c) Railway stations (Junctions) without bathing facility | 30 per head | 15 per head | 45 per head |
| | d) Railway Stations (Intermediate) with bathing facility | 25 per head | 20 per head | 45 per head |
| | e) Railway Stations (Intermediate) without bathing facility | 15 per head | 10 per head | 25 per head |
| | f) Interstate bus terminals | 25 per head | 20 per head | 45 per head |
| | g) Intrastate Bus Terminals/Metro Stations | 10 per head | 5 per head | 15 per head |

NOTES

1 For calculating water demand for visitors, consumption of 15 litre per head per day may be taken.

2 The water demand includes requirement of patients, attendants, visitors and staff. Additional water demand for kitchen, laundry and clinical water shall be computed as per actual requirements.

3 The number of persons shall be determined by average number of passengers handled by stations, with due considerations given to the staff and vendors who are using these facilities.

4 Consideration should be given for seasonal average peak requirements.

5 The hospitals may be categorized as Category A (25 to 50 beds), Category B (51 to 100 beds), Category C (101 to 300 beds), Category D (301 to 500) and Category E (501 to 750 beds).