

UI GreenMetric Questionnaire

University : Karunya Institute of Technology and Sciences
 Country : India
 Web Address : www.karunya.edu

[4] Water (WR)

[4.4] Consumption of treated water

1. Water purifiers for drinking water
2. RO plant treated water for drinking and cooking.
3. Reuse of treated water for gardening and irrigation



Water Purifiers – For Drinking



R.O Treated Water – For Drinking and in the Kitchen



Reuse of Treated / Recycled water from Greywater Treatment Plant for Irrigation and Gardening

Description:

A. Water Purifiers for Drinking in the University Campus:

Description:

For drinking purpose Purified water is supplied through water purifiers & RO Plant for which Annual Maintenance Contract (AMC) has been done with the authorized vendor for regular servicing. TDS value and filters are checked on routine basis to monitor the quality of water and preventive maintenance of plant. The quality of the water is monitored as per the IS_10500 and revised module IS 10500:2012 - Drinking Water Quality Monitoring Protocol

In KITS, 86 water purifiers have been placed in all the departments (as given in Table below) for drinking purpose by faculty, staff and students at the University. Periodic monitoring and maintenance are done by the Department of construction and maintenance.

Sl.No	Location	Floor	Qty
1	Science and Humanities Block	Ground Floor	3
2	Electrical and Electronics Engineering	Ground Floor	2
3		First Floor	2
4		second Floor	2
5		Third Floor	2
6	Science and Humanities Block	First Floor	3
7	Science and Humanities Block	second Floor	3
8	Science and Humanities Block	Third Floor	3
9	Karunya Media Centre	Ground Floor	3
10	Karunya Media Centre	second Floor	1
11	Department of Aerospace Engineering	Ground Floor	1
12		First Floor	1
13		second Floor	1
14	Department of Aerospace Engineering (Lab)	Ground Floor	2
15	Registrar's Office	Ground Floor	1
16	Near Admission Office	Ground Floor	1
17	Near Student Affairs Office	Ground Floor	1
18	Vice Chancellor's Office	First Floor	1
19	Controller of Examinations Office	First Floor	1
20	Near Trustee Office	second Floor	1
21	Department of Management	second Floor	1
22	Department of Mechanical Engineering	Ground Floor	1
23	Department of Mechanical Engineering	First Floor	1
24	Department of Mechanical Engineering	second Floor	1
25	Smithy Lab	Ground Floor	1
26	Mechanical Workshop	Ground Floor	3
27	Computer Technology Centre - II	Ground Floor	1
28		First Floor	1
29		second Floor	1
30	Elshaadi Auditorium	Ground Floor	4
31	Elohim Auditorium	Ground Floor	2
32	Emmanuel Auditorium	Ground Floor	4



33	Food Court	Ground Floor	3
34	Computer Science and Technology	Ground Floor	1
35		First Floor	1
36		second Floor	1
37		Third Floor	1
38	Department of Civil Engineering	Ground Floor	1
39		First Floor	1
40		second Floor	1
41	Computer Technology Centre - I	Ground Floor	1
42		Third Floor	1
43		Fourth Floor	1
44	Library	Ground Floor	1
45	Department of Electronics and Communication Engineering	Ground Floor	2
46		First Floor	2
47		second Floor	2
48		Third Floor	2
49	Biotechnology Block	Ground Floor	2
50		First Floor	2
51		second Floor	2
52		Third Floor	2
Total			86

B. R.O Treated Water for Drinking and in the Kitchen

- The 2000 LPH (Litres per Hour) RO Plant is installed in New Gents Hostel Mess in the year 2017. The Make of the RO Plant is Agua Smartcare. To avoid the usage of drinking water, RO treated groundwater is used for cooking purpose (1400 KL/Year – 1400m³)
- The 500 LPH (Litres per Hour) RO Plant is installed in Sinai/Tabor Staff Qtrs. The Make of the RO Plant is Crossfields. The RO treated water is used for Drinking purpose in Staff Quarters (418000 L/Year- 418 m³)

C. Reuse of Treated / Recycled water from Greywater Treatment Plant for Irrigation and Gardening

In KITS, for effective recycling and reuse of greywater from sinks, showers, washing of utensils in the kitchen and washing machines, five Sewage Treatment Plants (STP) have been constructed in the Student Residences. In addition to that, to treat the black water from all the student residences, four Biogas Plants are available to treat black water and recovery of biogas to substitute two to three commercial cylinders for cooking everyday. The treated or recycled wastewater is reused for gardening (from 113 STP treated water outlets). The details on the capacity of each STP and the inflow rate with the quantity of treated effluent

Measurement:

The flow meters have been placed at the storage tank of treated water and the measurement is done before being used for gardening and irrigation.



Flow meters at the filter unit of Treatment plant to measure the treated water used for gardening and irrigation

Average Treated water Output from STP's in KITS Campuses				
Sl.No	Location	Capacity of STP	Wastewater Flow Rate in STP	Output (Treated Water)
1	JMR STP	1000 KLD	650 KLD	600 KLD(m ³)
2	FDR STP	400 KLD	250 KLD	240 KLD(m ³)
3	Ladies Hostel STP	450 KLD	250 KLD	220 KLD(m ³)
4	PR GARG STP	600 KLD	350 KLD	320 KLD(m ³)
5	Bethesda STP	8 KLD	4 KLD	4 KLD(m ³)

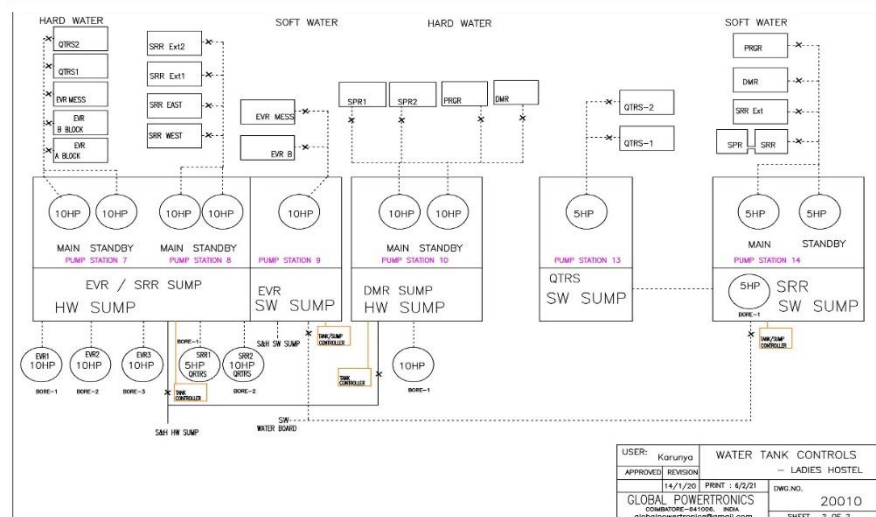
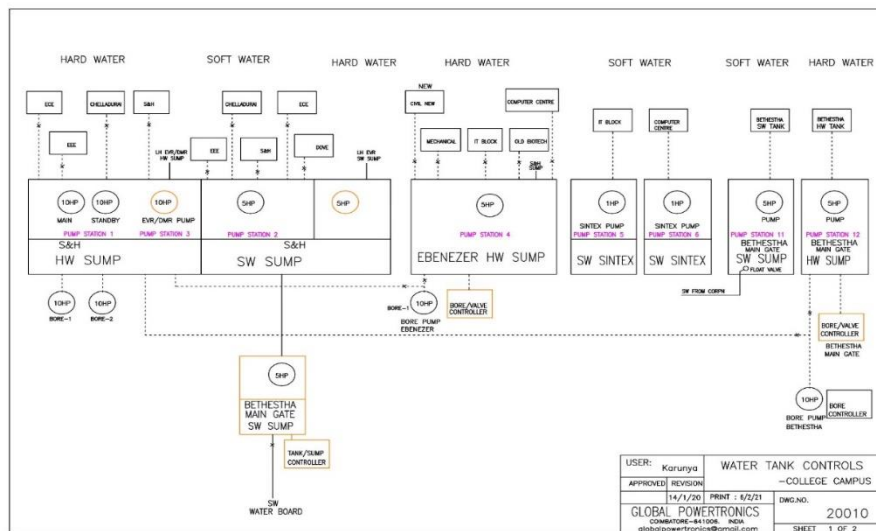
Reuse of Greywater for irrigation and gardening (Outlet Points)

S. No	No. of outlet locations
Student Residences /Hostel	88
Campus	25

D. Quantity Of Water Saved By Implementing Water Conservation And Management Activities (Other Than Roof-Top RTWH)

The wastage of water due to the overflow in the storage tanks and sumps is prevented by using sensor-based pump operating system. The sumps in the campus and student residences are connected to ensure water supply at all times in the case of any reduction in groundwater level or mechanical failure of pumps in the borewells. Three IoT based automated water controllers have been installed in the overhead tanks and sumps by which 10% amount of water and energy is being conserved.

1. Overflow of water is controlled through sensor monitoring system.
2. All the water sources, sumps, OHTS and pumps are being monitored in an effective manner.
3. Power Saving due to controlled usage of motor.
4. Maintenance of motor and pumps is less.



Layout of IoT based Centralized Water Level Controlling Monitor System

Additional evidence link (i.e., for videos, more images, or other files that are not included in this file):
 1. Link - Video : [www.karunya.edu/iqac/Rankings/UIGreenMetric/Water/4a Additional.mp4](http://www.karunya.edu/iqac/Rankings/UIGreenMetric/Water/4a%20Additional.mp4)